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SOUTH AUSTRALIA

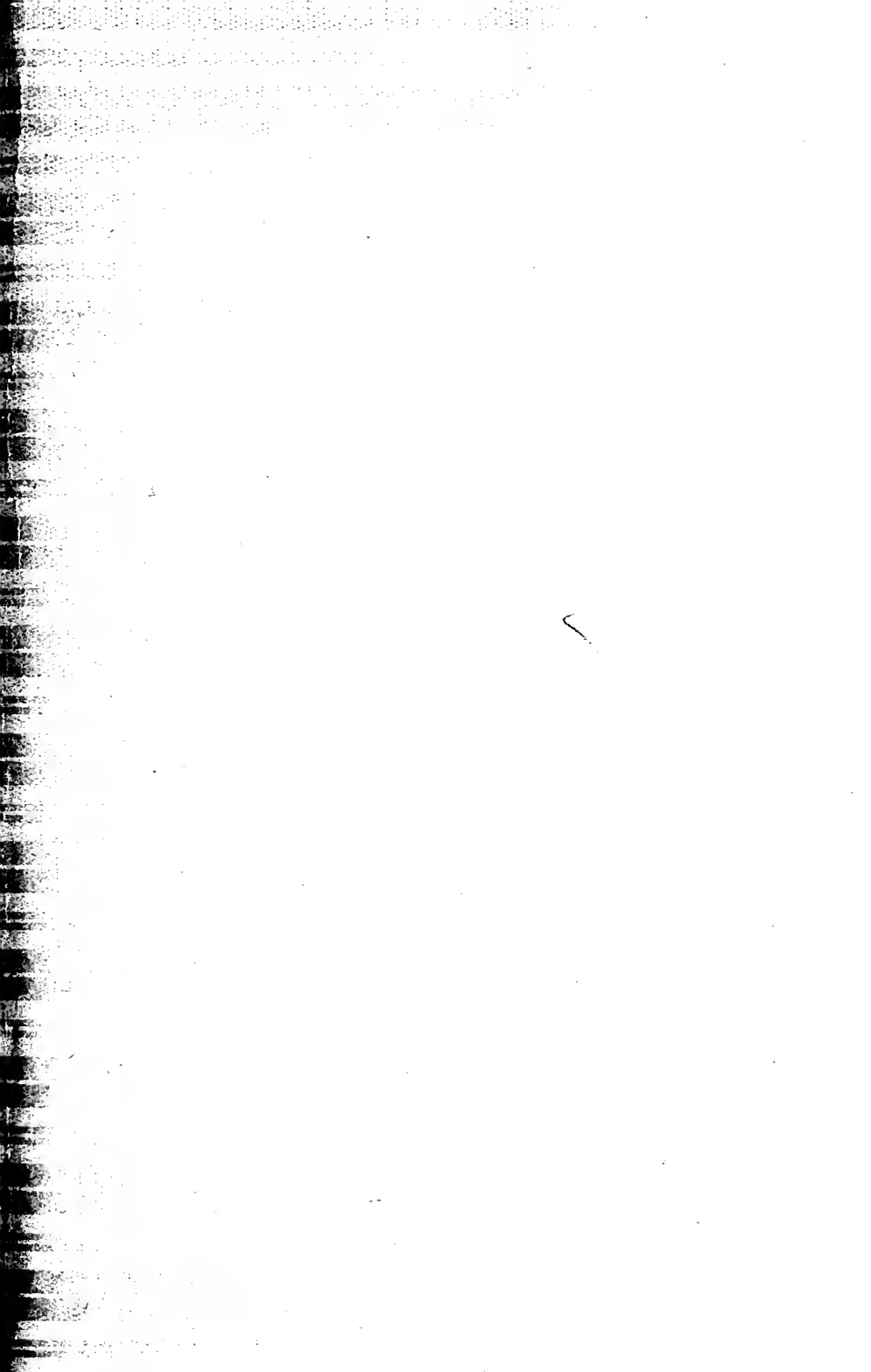
ITS HISTORY, PRODUCTIONS,

& NATURAL RESOURCES





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Adelaide in 1837.

SOUTH AUSTRALIA:

ITS

HISTORY, PRODUCTIONS,

AND

NATURAL RESOURCES.

By J. P. Stow.



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WRITTEN FOR THE CALCUTTA EXHIBITION

By request of the South Australian Government.

Adelaide :

E. SPILLER, GOVERNMENT PRINTER, NORTH-TERRACE.

1883.

PREFACE.



THE Government of South Australia having honored me with a request to prepare a brief sketch of the foundation and progress of the colony, with some account of its products, industries, natural resources, and climate, this volume is the result. It is intended to give visitors to the Calcutta Exhibition, whose attention has not been directed to South Australia, reliable information with regard to that province. This being its special object, and on account moreover of its publication under official authority, party politics are avoided in its pages.

In preparing this little work, I have been assisted by my acquaintance with the subject of which it treats, gained during a residence of over forty years in the colony, and by the command of a great collection of materials, in print and manuscript, in my own possession. I have also freely consulted Dutton's, Forster's, and Marcus's histories, Bull's Recollections, Earl's Handbook of Tropical Australia, and other authorities ; and my labors have been facilitated by the assistance cordially rendered to me by all departments of the public service.

J. P. STOW.

SOUTH TERRACE, ADELAIDE,
AUGUST 30TH, 1883.

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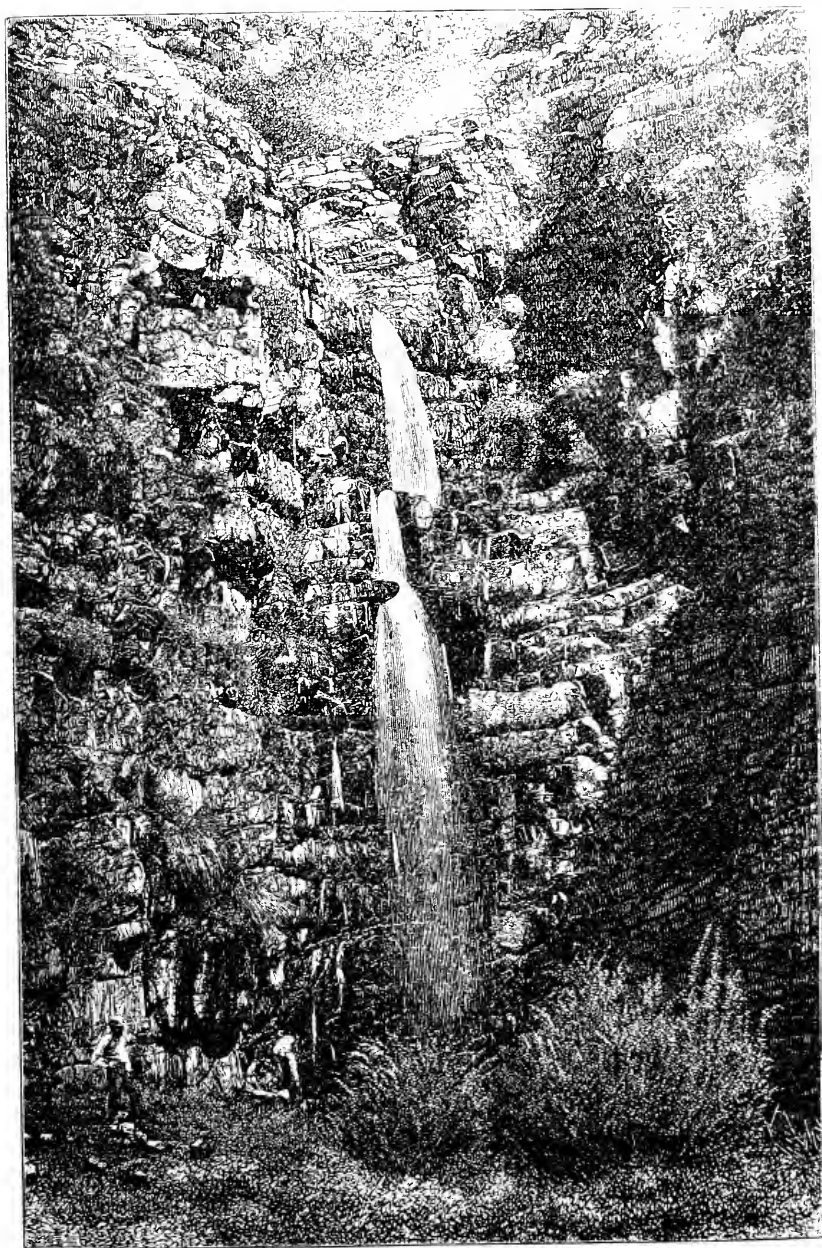
CHAPTER I.

South Australia—Absurdity of its name—Boundaries—Original limits—No Man's Land—Northern Territory—South Australia proper—Discovery—Flinders—His coast exploration—Kangaroo Island—Capt. Sutherland—Disappearance of Kangaroos—Capt. Sturt's voyage down the Murray—Capt. Barker—His ascent of Mount Lofty and crossing the ranges to the Lakes—Capt. John Jones and his discovery of the creek now forming Port Adelaide.

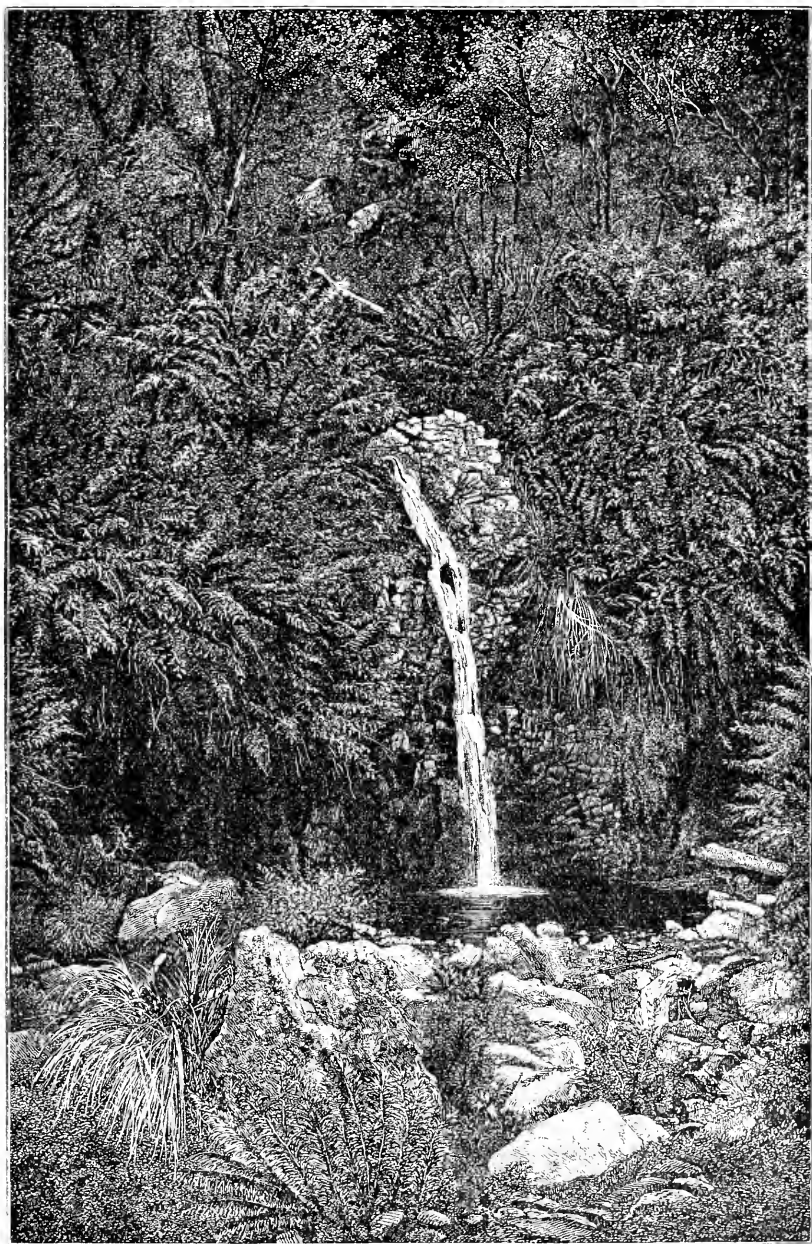
SOUTH Australia is singularly misnamed. Portions of Victoria and Western Australia are south of its most southernmost point; and since the Northern Territory has been added to South Australia, its nomenclature has become still more absurd. It is a pity that its original description, Flinders' Land, was not retained, but "Centralia" would convey a fitting representation of the position of the province, for it occupies the centre of the great island continent from the Southern to the Indian Ocean. On the west it is bounded by Western Australia; on the east, by Victoria, New South Wales, and Queensland, so that it is in territorial and intimate communication with every other colony of the group. The original limits were fixed by Act No. XCV., William IV., establishing the colony. This Act declared that part of Australia between the one hundred and forty-first and one hundred and thirty-second degrees of east longitude, and between the twenty-sixth degree of east latitude and the Southern Ocean, with all the bays and gulfs belonging thereto, and all the adjacent islands, a colony to be known as South Australia. Originally, all New Holland was under the jurisdiction of New South Wales, and formed part of its territory, but Western Australia was founded in 1829, its eastern boundary being long. 129. Thus between South Australia and her western neighbor there was a strip of territory,

three degrees in width, practically under no jurisdiction whatever. Nominally belonging to New South Wales, it was cut off from that province by the whole width of South Australia. Western Australia could not govern it, because she had no settlement of any kind within a thousand miles. South Australian squatters, however, had their flocks upon the very borders of this piece of country, and it is not surprising that, in response to the reasonable applications of South Australia, the Home Government should, in 1861, annex this No Man's Land to the only province able to make any use of it. Two years afterwards, in consequence of the discoveries of the gallant explorer Stuart, who crossed the continent from Adelaide to the Indian Ocean west of the Gulf of Carpentaria, all that portion of the continent north of lat. 26° ., and between Queensland and Western Australia, was added to South Australia. The map attached to this volume shows the exact boundaries of this addition to South Australian territory, which now contains more than 903,690 square miles, *i.e.*, South Australia proper, 380,070, and Northern Territory, 523,620 square miles.

At present, I will confine the attention of my readers to South Australia proper, *i.e.*, south of lat. 26° . Capt. Flinders was the discoverer of the South Australian coast. From the great Australian Bight to Encounter Bay, or rather Lacepede Bay, every island, every cape, every important bay and point, the mountains and eminences within view, were named by him; and considering the rapidity with which this exploration was accomplished, extending as it did only from the 8th December, 1801, to the 9th April, 1802, the accuracy with which the geographical positions were fixed, and the soundings taken, was amazing, and has ever been the admiration of mariners who have sailed in those waters. But Flinders was essentially a marine explorer. He travelled but little on land. He killed kangaroos on the island, which, on account of the immense numbers of these animals he found there, he named Kangaroo Island. Strange it is, that for the last sixty or seventy years not a kangaroo has been seen there. Flinders could not have confounded the animal with a smaller marsupial, as those he killed weighed from 65 to 120lbs. The disappearance of these animals has been attributed to various causes, but the most probable supposition is that they were swept off by some disease. In 1819



Morialta Waterfall, near Adelaide.



Waterfall in Mount Lofty Range.



Capt. Sutherland found kangaroos—some weighing 120lbs.—and emus were plentiful on Kangaroo Island, but both animals, soon after, became extinct. A man named Bates, who has lived on the island ever since 1827, never saw a specimen of either during his long residence there. Capt. Flinders discovered and named Mount Lofty, but did not explore the few miles of plain between the coast and the range of hills, of which that is the highest point. He did not discover the fresh-water streams that in winter time empty their waters into St. Vincent's Gulf, the creek or branch of the sea now forming Port Adelaide, or the two somewhat similar creeks in Spencer's Gulf that accommodate the shipping of Port Pirie and Port Augusta; nor did he see the Murray and the lakes through which it passes to the ocean. His work was coast exploration, and he did it well and quickly, leaving others to come after him, profit by the abundant information he supplied, and, by closer examination, make further discoveries. The name of Flinders is regarded by Australians with gratitude and reverence. It appears in the geography of the continent, in regions so far apart as the Gulf of Carpentaria and the southern coast. In the very neighborhood of Port Lincoln, first explored by him, the amiable and gallant Sir John Franklin, who had served under Flinders about forty years previously, erected a monument to the memory of his old commander.

The real discoverer of South Australia, as a country fit for European habitation, was Capt. Sturt. He had already established his name as a great Australian explorer, when he started on a boat voyage down the Murrumbidgee, which had lately been discovered by Sir Thomas (then Major) Mitchell. In a few days the explorers found themselves sweeping into a grander stream, which Capt. Sturt named the Murray. It proved afterwards to be identical with the river previously discovered, at a point higher up, by Messrs. Hume and Howell, and called after the first-named of these explorers; but this fact does not detract from the merits of Capt. Sturt's achievement. He found the junction of the Murrumbidgee with that noble river, and soon afterwards passed the mouth of the Darling a great tributary he had himself discovered. Pursuing his voyage through perils by water, perils by snags, and dangers from savages, who had never before seen the face of a white man, he reached Lake Alexandrina, crossed it, and passed into the

Murray again, but could not get through the dangerous mouth, as he wished to do, in order to meet a vessel waiting for him in St. Vincent's Gulf.

Of Capt. Sturt's toilsome journey up the stream, back to his starting point, it does not fall within the scope of this work to speak : but when about the lakes, the ranges to the westward attracted the gaze of the explorer, and he was convinced that there was rich country among and beyond those hills of promise. When, after all his toil and perils, he again reached Sydney, he urged this opinion upon the Government there, and in consequence his friend, Capt. Barker, a man likeminded with himself, who was about to leave King George's Sound for Port Jackson, was requested to call at St. Vincent's Gulf to ascertain whether these impressions were well founded.

Captain Barker arrived off Cape Jervis on the 13th April, 1831, with Dr. Davies, Mr. Kent, of the Commissariat, some soldiers, and the crew of the vessel. On the 17th April, having moved the vessel northward, he landed with Mr. Kent, a servant, and two soldiers. Accompanied only by Mr. Kent, he crossed the plains, entered the range, and reached the summit of Mount Lofty. Only those who have enjoyed the view from that eminence can form any conception of the magnificent prospect spread out before the two explorers, and can imagine the effect it must have produced upon their minds, associated as it was with the reflection that they were the first civilized men who had ever beheld it. Five miles westward from where they stood, the hills sloped down into the rich plains, partly timbered with the lordly eucalyptus and beautiful underwood, partly clothed with forests of mimosa, while alternating with this woodland were areas of open grass pastures. This sort of country extended to the sea shore westward, and away twenty miles distant to the south-west, where the range sweeps round till it reaches the bay. To the north-west, the view of open plains extends for seventy miles, till it is bounded by the Hummocks, named by Flinders "Hummock Mount." Capt. Barker looked long and earnestly over country where the City of Adelaide and suburbs, with their population of sixty thousand, now stand ; over land now studded with handsome villas, noble looking mansions, and thriving towns and villages, or planted with vineyards and orchards ; over stretches of plain and undulations where fields have yielded their

harvests of golden grain, or flocks or herds have grazed and fattened. The death of Capt. Barker, a few days after he had viewed this landscape, was a loss to science, to Australia, and to his native country, but it was specially unfortunate in connection with the new region he was exploring, for the particulars furnished by his companion must have been of the most meagre description, otherwise the first South Australian colonists would have been better informed respecting the land they came to occupy. Enough, however, was told to point to the shores of St. Vincent's Gulf as a promising spot for a new colonising settlement. When Capt. Barker returned from Mount Lofty to his vessel, he stood southward, landed again with some officers and men, and walked to Lake Alexandrina. The whole party were delighted with the ranges they passed through and the country generally. They saw Mount Barker, since named after the gallant leader of the party, and reached Lake Alexandrina. Wishing to trace the passage from the lake to the sea, Capt. Barker swam across a narrow channel, ascended a sand hillock, descended on the opposite side, and was seen no more. It was afterwards discovered that he had been murdered by the savages, and his body thrown into deep water, where it was washed out to sea.

After Capt. Barker's ill-fated expedition, Capt. Jones coasted about St. Vincent's Gulf, and from his account of his cruise, must have entered the creek that now constitutes Port Adelaide. He landed at several places, and killed kangaroos. Capt. Jones speaks of four streams flowing into the Gulf. These were probably the Onkaparinga, the Sturt, and one or two brooks between those rivers. He could not have seen the Torrens, which does not directly pour its waters into the Gulf, but, in flood times, spreads out into extensive swamps, stretching in one direction to the Patawalonga Creek which joins the sea at Glenelg, and in another direction to the Port channel, and so the flooded water reaches the ocean in an indirect way.

CHAPTER II.

Establishment of the Colony—The Wakefield system—Land immigration—No convicts from the Old World—No State Church—The founders of the Colony—First Commissioners.

THE news of Capt. Sturt's latest discoveries excited great interest in the old country, and in 1831 there was a movement in favor of establishing a new colony on the shores which Flinders had explored thirty years before. The exact locality was not determined upon by the projectors of the enterprise, but their idea doubtless was that the new settlement should be somewhere about Spencer's or St. Vincent's Gulf, if not at Encounter Bay. The project was dropped for a time, but fully revived three years later. It was thought desirable that there should be a new colony, not a mere off-shoot of New South Wales; and the principal reason that the scheme took this shape was, that the projectors desired to start with a better land system than had yet been tried in New Holland. Western Australia, then spoken of as the Swan River Settlement, has furnished a shocking example of what to avoid in the way of land legislation. In that colony immense blocks of land were freely granted to settlers, regardless of their means to profitably occupy such holdings, or the necessity for obtaining some payment for those portions of the public estate the Government thought fit to alienate. The immediate consequence of this unwise policy was that the settlers were without the necessary supply of laborers to till the soil, and many, if not most of their large estates lay waste for thirty years, or at most only supported a few sheep or cattle. To this day Western Australia has a population of under 40,000, though she is at last making considerable advance in wealth and in the development of her resources. The lagging so far behind in the race has been attributed to the fact that her good land is in comparatively small patches instead of in large areas of hundreds of miles, as in the other colonies; but granting that the colony did labor under this disadvantage, the more necessity there was that

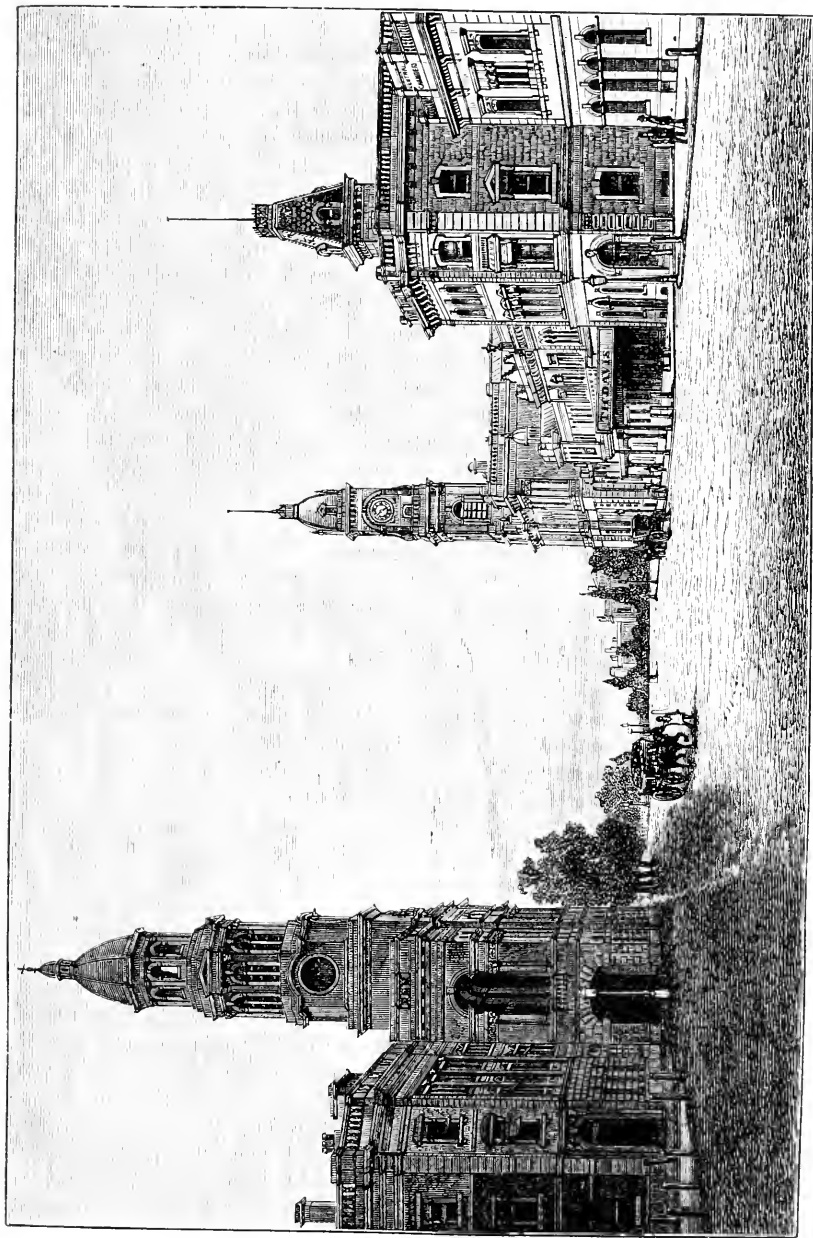
these patches should be put to the best use, instead of being monopolised by persons who either had not the wish or lacked the ability or means to utilise them.

Perhaps more than any other man, Edward Gibbon Wakefield may be regarded as the founder of South Australia, for the scheme for its establishment seemed in the first instance to be started principally to experiment with his theories of a land system, applied to the circumstances of an entirely new colony.

The Wakefield system was something more, however, than a land system: it dealt with the supply of labor, and professed to point out the safest and best principles upon which to embark in the colonization of a country hitherto known only to the savage or the adventurous explorer. Wakefield was opposed to grants of land. He proposed that it should be sold at a substantial price, and that the money thus obtained should be employed to import laborers to till it. Thus the land would be turned to good account at once. People would not give a pound or ten shillings for land they did not intend to make profitable use of, and the labor imported by means of the price they did pay would enable them to cultivate the soil. The scheme was watched with interest; it was enthusiastically defended, and flippantly decried; but it worked well till the colony outgrew it. For the first two or three years delays in the surveys of the country lands, official mismanagement, the unwise policy which induced the settlers to remain in Adelaide instead of going into the wilderness to attend to the rich soil only waiting for the plough to make it yield bounteous harvests, prevented the Wakefield system from having fair play; but when there came a wise administration of public affairs, all that was propounded as the natural result of the system came to pass. Some large estates were bought and paid for in hard cash by the South Australian Company and a few private capitalists, but the greater portion of the land alienated was purchased by *bonâ fide* agriculturists. South Australia became at once an agricultural country. The 4lb. loaf fell in price from five shillings to sixpence, and within six years from the proclamation of the colony it exported wheat to other Australian provinces, and has continued to do so ever since. Meat fell from a shilling and upwards to twopence and a penny a pound. The system worked well for the first sixteen or seventeen years of the colony's history. The capitalists were too few,

and not sufficiently powerful, to drive the *bonâ fide* agriculturists out of the auction room ; and many hardworking, frugal laborers saved enough to purchase one or two eighty-acre sections, and thus in many cases laid the foundation of a respectable fortune. A great change came, however, after the discovery of the Victorian diggings in 1851. Wealth poured into South Australia. Through the rise in the value of live stock the squatters became rich men. Fortunes were made by trade and in speculation. Shepherd kings and capitalists soon contracted earth-hunger. The land-shark came into existence. Persons wishing to buy land for farming purposes, were at first forced to give great prices, and soon gave up the struggle against wealth and jobbery. They had to be satisfied with refuse land, or become tenants, or buy from speculators at two, three, four, or five times the price originally given for the land. The public revenue gained nothing by this, agriculture was retarded, and the colony was injured. It was not till 1869 there came a reform that was urgently needed in 1853, and the South Australian Parliament passed an Act with residence and cultivation conditions, in its main principles similar to a system recommended about a hundred years before, by Adam Smith, as suitable to the circumstances of some of the British American colonies. The Act was defective in matters of detail, and to some extent was used to defeat the objects of the legislators who passed it ; but it established principles that have been more effectively carried out by subsequent legislation. At another stage of this work, I shall have to deal further with the land system of the colony ; at present it is only necessary to observe that the Wakefield system which worked so well for the first seventeen years of the colony's existence, has necessarily been so altered in its features since that period, that its author would not recognise it. It may be observed, however, that auction sales that have been adhered to (except for a brief period, during which farming lands were selected by lot) from the year 1842, when an Imperial Act was passed ordaining that mode of sale, are no essential part of the system, and whatever evils may have attended that mode of disposing of the waste lands cannot properly be charged upon Wakefield.

Originally, the whole of the proceeds of land sales were to be expended in immigration ; but this part of the system has under-



General Post Office and Town Hall, Adelaide.

gone serious modifications. The Act just referred to provided that only half the proceeds should be so applied, and this was the law for many years, till it was abandoned as unworkable. Whenever the working classes experience the slightest difficulty in obtaining full employment at high wages, there is an outcry against State immigration, and what that means in a colony with universal suffrage, and Responsible Government, I need not say. When employment is abundant, and times prosperous, and the pay of the working man high, the Government may pour immigrants in by thousands without provoking a protest. At last the conclusion seems to have been reached that the best plan is to bring immigrants to the colony when they are really wanted, and not at other times. At present, free immigration, in practice, is abandoned, and the immigrants who arrive pay a portion of their own passage, and the Government the rest; or else they come out under what is termed the nominated or land order system, under which a person who nominates and pays for the passage of immigrants certificated suitable for the colony receives a £20 land order for each adult, and a £10 land order for each child under ten. After the immigrants have been in the colony for two years, the land orders are available to the amount they represent in the purchase of Crown Lands, and are transferable. The scale of payments of assisted immigrants, towards the cost of their passage, is as follows:—Under 12 years, £3; between 12 and 40 years, £4; between 40 and 50 years, £8. I am pushing forward a long way, as far in fact as the legislation of 1872; but my object has been to show what our land and immigration systems were originally; how they worked for a few years; and how they have been altered since.

There were other important principles besides those relating to land and labor distinguishing the scheme for colonising South Australia. It was resolved that it should be free from the taint of convictism; that the felony of the United Kingdom or of any other country should not be poured upon its shores. There were some proposals a few years later to infringe upon this principle, by the introduction of Parkhurst Boys and Pentonvillians; but the Home Government did not persist in this design against the passionate remonstrances of the colonists.

It was resolved by the founders of the colony, some of the most influential and energetic of whom were dissenters, that it should

have no State church. It is true the Act of 1834, establishing the colony, authorised the appointment of "Chaplains and Clergymen of the Established Church of England or Scotland"; but such representations were made to the British Government, that only a colonial chaplain was appointed, and the authority to appoint chaplains and clergymen was repealed by an Act of 1838. The office of colonial chaplain ceased with the death of the second occupant of the position. Grants-in-aid to religious denominations were established in 1846, but abolished in 1851, in the first session of the Legislative Council, consisting of two-thirds elective members. As soon as the people had a voice in the management of their own affairs, they declared decisively against all State interference with religion.

The Act of 1834 provided for the appointment of Commissioners to carry it into effect, and the following were appointed:—Colonel Torrens, F.R.S. (chairman), W. A. Mackinnon, Esq., M.P., Jacob Montefiore, Esq., W. Hutt, Esq., M.P., George Palmer, jun., Esq., John Wright, Esq., George Fife Angas, Esq., Samuel Mills, Esq. The *personnel* of this board must have been soon altered, for shortly afterwards Mr. (afterwards Sir) Rowland Hill figures in the early records of the colony as one of the Commissioners. The Committee, remodelled in 1834, to carry out the colonisation scheme, consisted of thirty-two gentlemen, including such men as George Grote, Sir W. Molesworth, H. L. Bulwer, J. W. Childers, and others whose names are perpetuated in the street nomenclature of Adelaide. Outside both Commission and Committee there were able men earnestly working in furtherance of the enterprise, and foremost among them may be mentioned Mr. (afterwards Sir) Richard Hanson, the late Chief Justice of the colony; Mr. (afterwards Sir) John Morphett, who for years filled the position of President of the Legislative Council; Mr. Robert Gouger, the first Colonial Secretary; Mr. John Brown, and others. The Act was not to come into operation till the Commissioners had raised £35,000 by the sale of land, and they were "required to raise £20,000 by the issue of bonds, to be called South Australian Government Securities, and invest this sum in the funds as a guarantee that the colony would at no time be a charge on the "mother country." The Home Government did not guarantee the loan, and it was effected at a very high rate of interest. The

first purchasers of land paid 12s. per acre, and for the sum of £81 received one town acre and 13½ acres of country land. The price was soon afterwards raised to £1. The Commissioners did not receive their appointment till May, 1835, and the first vessel with settlers for the new colony sailed on the 22nd February, of the following year.

CHAPTER III.

THE PIONEERS.—THE FIRST FIVE YEARS.

The first vessels—Colonel Light—Lieutenant Pullen—Kangaroo Island—Port Lincoln—Encounter Bay—The Murray Mouth—Sir John Jeffcott—Port Adelaide—Discovery of River Torrens—Site of Adelaide—Captain Hindmarsh, the first Governor—Disagreements about the site of the capital—Delays in surveys—Mr. Kingston's scheme of survey—Colonel Light's death—Governor Hindmarsh's recall—Arrival of Colonel Gawler—Extravagant administration—The colony deeply in debt—Colonists concentrated about the metropolis—Financial crash—Overlanders with cattle and sheep—Eyre's explorations—His journey to King George's Sound—Captain Grey's arrival—Retrenchment—Distress—Improved condition of affairs—Rapid advance of agriculture—Mineral discoveries—Silver lead mines—The Kapunda Mine—The Burra—General progress—Captain Sturt's explorations, and discovery of Cooper's Creek—Captain Grey appointed Governor of New Zealand.

THE first vessel that arrived in South Australian waters with intending settlers was the *Duke of York*, and the first colonist who stepped upon South Australian territory was Mr. Samuel Stephens, an able man, who came to the colony as Manager for the South Australian Company, and several years afterwards lost his life by a fall from his horse. This pioneer ship anchored on the 27th July, 1836, in Nepean Bay, Kangaroo Island, which was the rendezvous for the early vessels, it being thought not improbable that the capital would be on the island, which was the best known part of the new province. The *Lady Mary Pelham* and *John Pirie* followed with settlers, including small capitalists, farmers, business men, and laborers. The *Rapid* arrived on the 20th August, having on board Colonel Light, the Surveyor-General, and his staff of surveyors. Mr. (afterwards Sir George) Kingston followed in the *Cygnets*, and landed on the 11th September. The *Emma* and *Tam o' Shanter* arrived in October, and the *Africaine* in November. Colonel Light was a man of remarkable attainments, great versatility of talent, and high character. He had seen distinguished service in the Peninsular war, on the staff of the Duke of Wellings-

ton, and eulogistic reference to him is made in Napier's history of that prolonged and brilliant struggle. He was a sailor, having held a command in the Egyptian fleet. To his other attainments he added those of an artist, and he had a singularly clear and forcible style of expressing his views. It would have been impossible to have selected any one more suited for the arduous and difficult task imposed upon Colonel Light, and he proved fully equal to the task. The firmness and determination necessary to the discharge of the duties of his position were continued with great patience, a lofty sense of honor and an amiability of disposition that won for him the respect and affection of the colonists generally, and most of all of those with whom he was brought in contact.

On arrival at Kangaroo Island, he saw at a glance that was not the place for the settlement, and he lost no time in exploring the coast in order to decide where the capital of the embryo State should be fixed. Port Lincoln he carefully examined, and decided that, though the harbor was magnificent, there was nothing in the adjoining country to warrant the establishment of the first and principal settlement there. He visited Encounter Bay, and came to the same conclusion with regard to the country in that locality, and moreover there was nothing in the bay to recommend it as a harbor. The mouth of the Murray he found had a bar which would prevent the passage of large vessels, and the breakers were extremely dangerous. Sir John Jeffcott, the first Judge of South Australia, Captain Blackensop, and several seamen were drowned, early in 1837, in the endeavor to pass through in a boat. Lieut. Pullen succeeded in taking a brig through, and for about eighty miles up the stream to the point on the river known as Blanchetown, where she sunk.

In St. Vincent's Gulf, Colonel Light searched long and carefully for a good port, and found some difficulty in recognising the features of the coast from the descriptions of Capt. John Jones. At last a fine inlet or creek was discovered, and Lieut. Pullen explored it up to and beyond where the wharfs and town of Port Adelaide are now situated. Colonel Light pronounced this to be a fine natural harbor, capable of improvement in the future, when the resources of the colony should justify the outlay. He fixed the port too high up, and the site had to be changed several years afterwards; perhaps it would have been better and would have

saved expense in deepening operations, had the North Arm been chosen ; but however this may be, there is no doubt that this creek was the proper place for the chief harbor of the colony.

It was essential that fresh water should be discovered, and Mr. Kingston being requested to make a search, started on foot with Mr. John Morphett, and another of the pioneers, and discovered the Torrens, coming from the Mount Lofty range of hills to the eastward. This river was soon found to be, in its course through the plains, something like a chain of ponds in the summer time, but in the hills it was and is a constantly running stream. By means of a weir and two reservoirs, seven or eight miles from Adelaide, the city and suburbs, Port Adelaide, Glenelg, and an area of about fifty miles of country, are supplied with pure water, a large supply coming from the Sixth Creek, a tributary that joins the Torrens in the range. On Colonel Light being informed of this river, he followed it up till he came to rising ground which he selected as the site of the metropolis, and to this selection he adhered in spite of all opposition. Nearly fifty years have passed away since then, but time only serves to show more clearly the wisdom of his choice. The City is about eight miles from the Port, but only flat low land could have been got any nearer. The ground on which the City is built, is from 96ft. to 176ft. above the sea level, and is admirably situated for drainage. The late Mr. Clarke, the eminent hydraulic engineer, who designed the plan of draining Adelaide now being carried out, stated that there was not a city in the world more easy to provide with a system of deep sewerage.

Capt. Hindmarsh, R.N., the first Governor, arrived at Holdfast Bay on the 28th December, 1836, in H.M.S. *Buffalo*, and landing the same day proclaimed the colony, under the shadow of a gum tree, in the presence of the members of his council and other officers, a few hundred settlers, and a guard of Marines. The 28th December has ever since been observed as the national holiday. The Governor was one of the veterans who, during the close of the last century and the beginning of this, had upheld the honor of old England on the ocean. He had served under Nelson, and had lost an eye at the battle of the Nile, where he greatly distinguished himself. As a civilian administrator, he did not achieve success. He wished the city moved a mile or two nearer the Port, on to the low ground, and Colonel Light yielded for a few days, but then



Adelaide Plains, viewed from Mount Lofty Range.

returned to his original plan, from which he would not afterwards deviate. The Governor managed to quarrel with nearly all his officers, and with the President Commissioner, Mr. (afterwards Sir) J. H. Fisher. Disagreements took place among the colonists about the site for the capital, a section of them advocating Encounter Bay. A meeting of the purchasers of land was called to consider this matter, early in 1837, when an overwhelming majority decided in favor of Colonel Light's choice, and that question was settled for ever.

Through this dispute, and afterwards through want of horses or other animal power to shift the survey parties and carry their provisions, the surveys were much delayed, and hence arose great dissatisfaction; Mr. Kingston returned to England, and submitted to the Commissioners a plan for a more rapid survey on a different system from that on which Colonel Light was proceeding. The Commissioners wrote to the Resident Commissioner, instructing him to request Colonel Light to proceed upon this new system, or, if he objected, to hand the survey over to Mr. Kingston, and occupy himself, until that was concluded, with an examination of the country about Lake Alexandrina. Colonel Light replied in indignant terms and resigned his office. All the surveyors who had been employed under him also resigned. In consequence of the severe comments on this affair, it was made the subject of Parliamentary inquiry in England, and a Committee of the House of Lords reported that Mr. Kingston had not attempted to undermine his superior officer, but, on the contrary, had acted loyally to him throughout. Worry, anxiety, and a sense of having been subjected to unfair treatment, seriously impaired the gallant Colonel's health, and doubtless brought on the illness which proved fatal. He died on the 5th October, 1839, and five days afterwards was accorded a public funeral, and buried in the square which bears his name, amid the lamentations of a large concourse of colonists. A monument, with a suitable inscription, marks the spot where rests all that is mortal of one to whom the colony owes so much.

Captain Hindmarsh's disagreements with his officers increased; the Commissioners addressed lengthy complaints to the Colonial Secretary, Lord Glenelg, and in 1838 the Governor was recalled. He left the colony on the 16th July of that year, and Mr. George Milner Stephen became Acting Governor till the arrival of the

second Governor, Colonel Gawler, on the 12th October, 1838. The services of Mr. Fisher, as Resident Commissioner, had been dispensed with, and the office was, on Colonel Gawler's arrival, absorbed in that of Governor, the dual control having worked unsatisfactorily. Some time afterwards the Commissioners in the old country were relieved of their duties.

The surveys had made considerable progress by the time the new Governor landed. The town lots were selected in March, 1837, and the country sections in May, 1838. Colonel Gawler came with a history and a reputation calculated to command respect and confidence. He had distinguished himself at many of the great sieges and battles of the Peninsula, and led the right wing of the 52nd Regiment in the grand charge at Waterloo. He was possessed of high attainments, and as a devout Christian his influence on a young community was of the most beneficial character. His great mistake was that of embarking in great public works about the city which were in advance of the times, and not of any utility in developing the resources of the colony. The effect of his policy was that the settlers were induced to remain in Adelaide, instead of engaging in the cultivation of the rich soil all around them. The laborers, too, were occupied in the same unprofitable way, and therefore were not available for those settlers who really wished to engage in agricultural operations. Colonel Gawler soon plunged the colony into debt. In 1840 the population was under 15,000, and considerably more than half the colonists were in Adelaide. In the last quarter of that year the expenditure was at the rate of £240,000 per annum, and the debt incurred exceeded £300,000. The bills drawn by His Excellency on the Home Government were dishonored, and a financial crisis ensued, the great crash, however, coming in the years 1841-2. Many colonists were absolutely ruined, and some never recovered their position. Poverty and distress were universal, and the utmost despondency prevailed with regard to the future of the colony. At the end of 1840 Colonel Gawler was recalled, and on the 10th May, 1841, Captain Grey arrived in the colony, and, walking into Government House, presented his commission as Governor of South Australia.

During Colonel Gawler's administration the difficulties of the survey had been overcome. Mr. Kingston having surveyed enough

THE PIONEERS.

to satisfy the original purchasers, resigned, and Captain Sturt, discoverer of the colony, was appointed his successor. He soon transferred to another office, and was succeeded by Captain Frome, R.E., who, with the assistance of a staff of surveyors and a number of sappers and miners, pushed on the surveys with great energy. In August, 1839, over 250,000 acres of land had been sold, realising nearly £230,000, and 7,412 settlers had arrived in the colony. In 1838 Messrs. Hawden & Bonney brought cattle ~~into~~ the colony from New South Wales, by the Murray route; and Mr. Eyre, afterwards celebrated as an explorer, and who subsequently was Governor of Jamaica, followed with a herd in the same year. Next year both sheep and cattle were imported by land. Mr. Bonney was the first overlander who brought sheep by the Coorong route. In 1840 there were 108,700 sheep, 7,600 cattle, 800 horses, and 1,700 goats and pigs in the colony. The quantity of land under cultivation was 6,722 acres; the year before it was 2,500 acres.

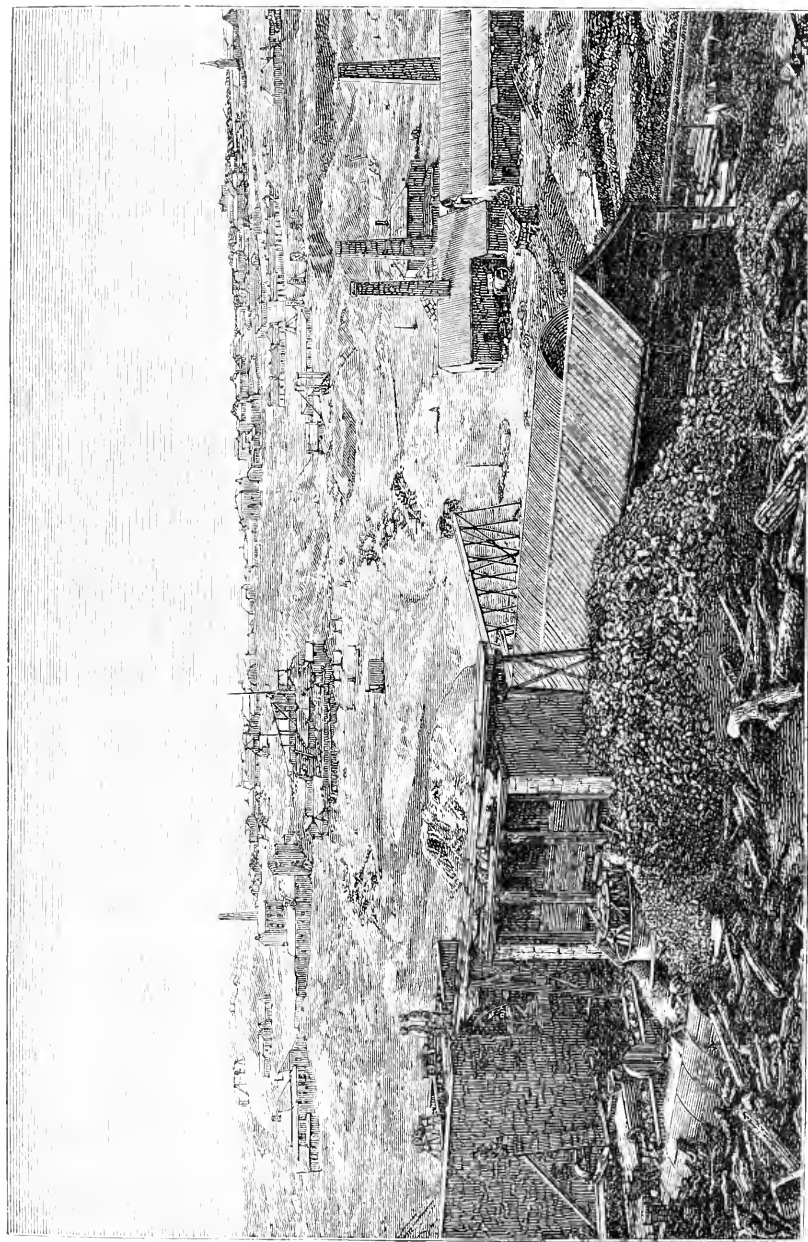
It was while Colonel Gawler was Governor that Mr. Edward John Eyre performed the overland journey from this colony to King George's Sound. After exploring the northern country about the waters now known as Lake Torrens and Lake Eyre, he struck for the coast, and proceeded from Streaky Bay to Fowler's Bay, which he made his depôt and starting point. Here he parted with his friend, Mr. Scott, who had so far accompanied him, and started with his overseer, named Baxter, a King George's Sound and two South Australian natives on a journey of over a thousand miles, once going 160 miles without any water but what the party carried. The two South Australian boys one night murdered Baxter, while the leader of the expedition was away watching the horses. Mr. Eyre finished the journey with only the Western Australian boy as a companion, and found that the country all along the coast was particularly barren, with no surface water for the greater part of the distance, except what could be got in the sandhills near the beach. During the expedition, Mr. Eyre obtained a supply of food from a French whaler he found at anchor in Western Australian waters.

Captain Grey found the expenditure un-reduced, the revenue decreasing, and only a few hundred pounds in the Treasury, and two thousand men, women, and children depending on the

Government for support. For 1842 he reduced the expenditure to £34,000. Wages he cut down from 1s. 6d. per diem with rations to 1s. 2d. without, and of course excited great discontent, as did his policy of economy generally. He finished the works Colonel Gawler had left in progress, and then employed the laborers in more useful undertakings, principally in roadmaking, and especially in the construction of a highway through the Mount Lofty range in the direction of Mount Barker. The colony had to suffer a recovery. Property fell in value; money was extremely scarce; privation was universal; but the colonists bore their adversities with fortitude, and there was a general movement in the direction of agriculture. In the summer of 1841-2 there was an abundant harvest; two years later wheat was 2s. 6d. per bushel. There was a great difficulty in obtaining labor to reap the harvest, but this was met by the invention of the stripper known as Ridley's machine, which strips the heads off and threshes them. When the machine is full, the contents are taken out and are ready for winnowing, and the machine is started again. Land had been rapidly taken up. Thirty-five special surveys, of 4,000 acres each, had been completed. The price was £1 per acre, and the cost of survey had been reduced to 7½d. There were upwards of 300,000 acres surveyed and open for selection, in addition to what had been sold and occupied.

The Imperial Parliament had advanced £155,000 to meet Colonel Gawler's dishonored bills, and a further sum of £27,290 was also advanced for the same purpose. Captain Grey after this drew on the Home Government for money to pay other debts of Colonel Gawler's, not provided for, but these drafts were dishonored, great distress being thereby occasioned. All these early trials were overcome by the colony, but the losses of individuals were never repaid.

While South Australia was rescued from insolvency by Governor Grey's policy, and the attention of the settlers turned towards farming and pastoral pursuits, prosperity came also from other sources. To those of the pioneers possessing any geological or mineralogical knowledge, South Australia presented the appearance of a country rich in minerals, and the impressions then formed have been amply justified. Within three or four years of the proclamation of the colony, several lodes of silver lead were discovered on



The Kapunda Copper Mines.

the slopes of the hills overlooking Adelaide, and some thousands of pound's worth of the ore were raised and exported. These workings were, however, soon abandoned as unprofitable. In 1842 the Kapunda mine, fifty miles from Adelaide, was discovered by the youngest son of Captain Bagot and Mr. (afterwards Sir) Francis Dutton, late Agent-General, about the same time and independently of each other. Capt. Bagot and Mr. Dutton secured the land, and after raising a quantity of rich ore, disposed of the property to a company, by whom it was profitably worked for years. Several years ago operations were suspended, but a fresh lode has been found on the mine, and is being worked on tribute. But the great mineral discovery, that contributed a new epoch in the history of South Australian progress, was the world-renowned Burra mine, a hundred miles from the metropolis. This was found by a shepherd named Pickett, who never received any reward, or at any rate any worthy of mention, for the service he thus rendered to the province. The land on which the mine was situated was purchased of the Government by a Company, with a capital of £12,000, in £5 shares, and no further call was ever made on the shareholders. The shares rose to £200. and for some time returned £40 per annum in dividends. A large population was settled about the mine; the town of Koorunga and lesser townships sprung into existence in the neighbourhood. A good market was thus established for agricultural produce; employment was given to thousands of miners, mechanics, carters, and laborers; and farmers, in the less busy times of the year, found profitable occupation for their teams in carting the ore to Port Adelaide or Port Wakefield, the former being a little over a hundred, and the latter about seventy miles distant.

Soon after the opening of the Burra mine, Captain Grey was appointed to the Governorship of New Zealand, then in one of the crises of its history, when one of the Maori wars had to be fought out. He left South Australia amidst the regret of all the colonists but those who could not forgive the retrenchment policy from which they had suffered, or a few whom in the exercise of his administrative powers he had personally offended. In 1845, the year in which he left, the population had risen to 21,759; the immigration was 2,336, and the emigration 449; revenue, £32,443; expenditure, £40,775—the balance being of course drawn from

the land fund ; land alienated during the year 49,658 acres, the amount received for it being £52,902 ; land under cultivation £26,218 ; cattle in the colony 22,911 ; sheep 355,689 ; imports £118,915 ; exports £95,272 ; staple produce exported £82,268 ; of which £42,769 was for wool and £6,436 for minerals. The returns were taken early in the year and did not include the exports of Burra ore. Heavy port dues were imposed during Captain Grey's rule and created great dissatisfaction, but were abolished before he left the colony.

Captain Sturt started on his expedition into Central Australia in 1844, and got within 150 miles of the centre of the continent. He discovered Cooper's Creek, watering what for many years past has been a valuable pastoral country. The unfavorable nature of the season, and the illness of several of his party, obliged him to return to Adelaide. One of his party, Mr. Poole, died in the interior, and a mountain near where he ended his earthly pilgrimage is named after him. Captain Sturt returned from this expedition in 1846, after enduring great privations.

CHAPTER IV.

1845 to 1855.

Major Robe—State aid to religion—The Burra mine—Attempt to impose royalties on mines—Sir Henry Young—First instalment of Representative Government—Victorian diggings—Bullion Act—Land system of Victoria the salvation of South Australia—Prices of produce—The Murray trade—Goolwa and Port Elliot tramway and harbor works—District Councils' progress.

MAJOR Robe, afterwards promoted to a colonelcy, who succeeded Captain Grey, arrived on the 25th October, 1845. He was a bluff old soldier, of few words, hospitable and kind-hearted, but of tory principles and no civilian experience—in short, a particularly unfit man to rule over such a community as that of South Australia. It was his fate to raise burning questions which set the people by the ears, and produced a great amount of illfeeling. He was persuaded to introduce a measure in 1846 for granting State aid to religious sects. As this was contrary to the principles on which the colony was founded, the scheme provoked the most violent hostility, influential members of the Church of England being among its most prominent and determined opponents. The Legislature then consisted of a nominee council of eight, four of whom were official, and the other four non-official members. His Excellency presided, and when the officials voted on one side and the independent members on the other, he gave his casting-vote for the Government. The arrangement was beautifully simple, but the casting-vote was not necessary in the case of the church grants, as two of the non-official members voted for them, and the Bill was passed in opposition to the will of an overwhelming majority of the people, as expressed by petitions and public meetings. The provision was only for one year, but it was renewed afterwards, and the system lasted till 1851, when it was abolished for ever.

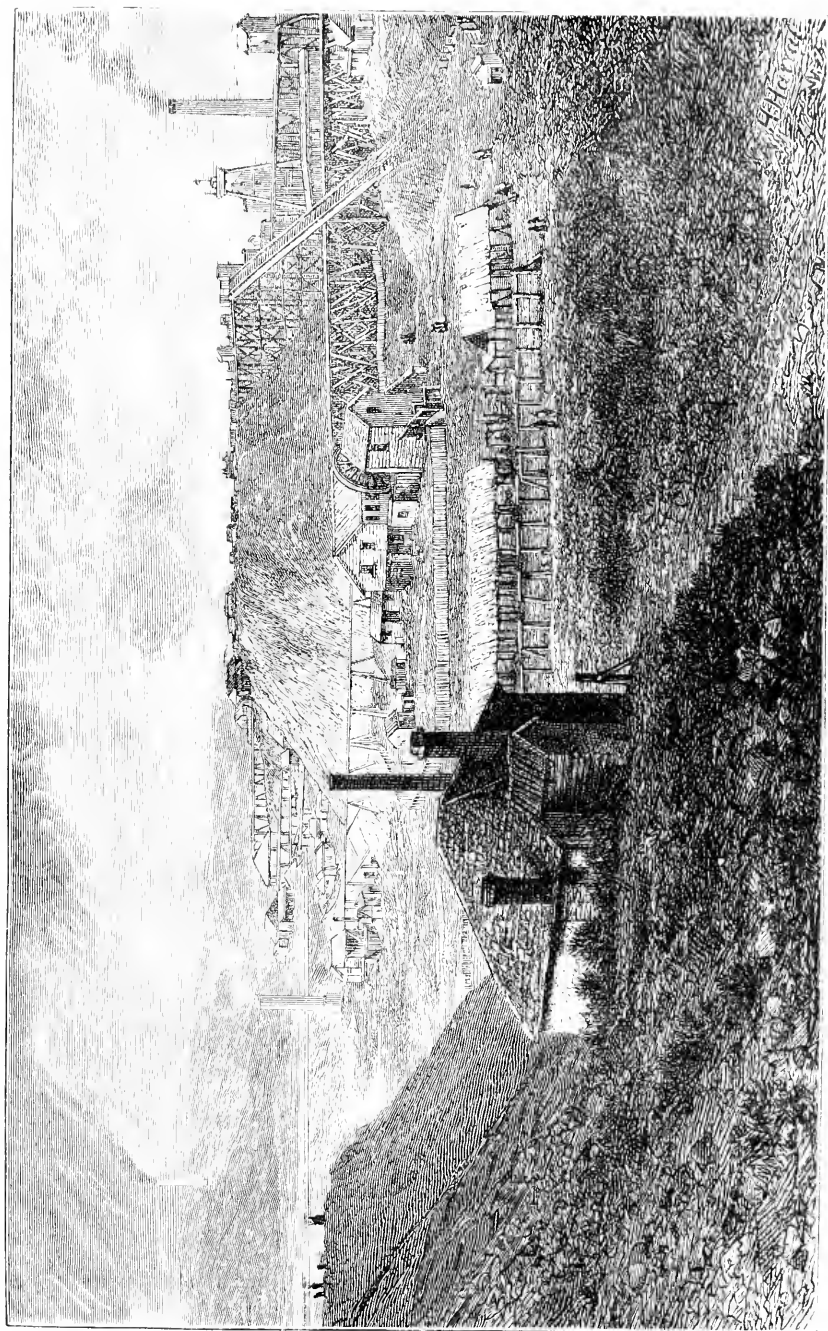
Major Robe's next embroilment was with the mining proprietors. He introduced in his Legislative Council a Bill for im-

posing a royalty on minerals, and his officials voted for it, of course, the non-official councillors opposing it. Five councillors were necessary to constitute a quorum, and when the division was called for, the four non-official councillors all walked out of the chamber, so effectually defeating the Government. His Excellency subsequently came to the conclusion, presumably after consultation with the Advocate-General, who was the only law officer of the Crown in those days, that he could impose this tax without the authority of the Council. The matter was, however, tried in the Supreme Court, when the Government were defeated. There was no appeal in the colony, which, at that time, possessed only one Judge, Mr. Charles Cooper, who was afterwards created Chief Justice and received the honor of knighthood from Her Majesty.

His Excellency was liked by people who had the privilege of his acquaintance, but in his gubernatorial capacity he was constantly in hot water. He and the colonists got very tired of each other, and it was at his own request he was removed to another sphere of official activity more suited to his tastes and previous experience. The colony had now reached such a position that it was not possible for its advancement to be stopped by the want of administrative capacity on the part of its rulers. Agricultural settlement had progressed; the population increased rapidly. Large quantities of ore were shipped from the Burra and other mines, and there was an immense amount of speculation in new mineral discoveries, most of which proved to be worthless.

The fifth Governor, Sir Henry Edward Fox Young, assumed the reins of Government on the 2nd August, 1848. His advent was unaccompanied by any labored formality or display. He rode up from Port Adelaide to Government House, escorted by two mounted policemen.

In the Imperial Act of 1834, founding the colony, there was a provision to the effect that when the inhabitants numbered 50,000 they should have a constitution. That number was exceeded before Sir Henry Young had been long in the colony, and the Home Parliament passed an Act abolishing the nominee Legislative Council, and establishing one to consist of twenty-four members, of whom eight were to be nominee and sixteen elected members. Half the nominees were officials. The colony was divided into sixteen electoral districts, each returning one member.



Burra Burra Copper Mine looking south.

Radical principles prevailed; but the one question on which the elections hinged was that of State aid to religion. The elections caused an amount of excitement never witnessed in political matters in the colony in these latter days, and three-fourths of the successful candidates were in favor of the purely voluntary system. The Advocate-General, Mr. Smillie, resigned before the elections were over, and Mr. Richard Davies Hanson, who about twenty years later became Chief Justice, was appointed in his stead, but stipulated that he should vote against the Government on this question, and did so. In the first session of the new Council, a Bill for the renewal of the grants-in-aid was rejected on its first reading. For several years afterwards the question was contested at casual elections to fill vacancies in the Chamber, and then the defeated party yielded to the inevitable, and it was accepted as the settled principle that there should be no connection between church and State. An Education Act was passed during the same session, making better provision than had hitherto existed for the secular instruction of the settlers. The Bible was, or might be, read in the State schools without note or comment.

The period of Sir Henry Young's administration was eventful in the highest degree. During those few years, a great social, political, and commercial revolution swept over Australia, owing to the discovery of the Victorian goldfields in 1851. Auriferous finds had been made shortly before in New South Wales, but not on a sufficiently extensive scale to cause such a mighty rush of people as followed quickly upon the opening up of the goldfields of Ballarat, Mount Alexander, and Bendigo, in the younger province. A few months before these discoveries, Victoria, previously known as the Port Philip settlement, was separated from New South Wales, and established as an independent colony, free from the evils of transportation.

Among the first immediate effects of the gold discoveries was the complete abolition of transportation to any part of Australia, to accomplish which object the Australian Anti-transportation League, with branches in all the colonies, had been formed in 1851. A few years afterwards, the people of Western Australia petitioned for transportation to that colony, as their only hope of rescuing it from its stagnant condition, but owing to the remonstrances of the other colonies, this was stopped finally in 1868.

Late in 1851, a great exodus from South Australia to Victoria commenced, and this increased during the first few months of 1852. All the coasting vessels were crowded with passengers to Melbourne, and thousands of people travelled overland, the distance being from 400 to 500 miles, according to the route taken. Men of all classes joined in the rush; farmers and their laborers, shopkeepers, clerks, Government officials, mechanics, doctors, and schoolmasters, sailed, or rode, or travelled on foot to the neighboring colony. South Australia lost most of her male population; some townships were left with only one or two adult male residents. Trade was paralyzed; houses were left empty; and property was enormously depreciated in value. There was a run upon the banks early in 1852, and the gold in its native state, or in bullion, of course was not a legal tender; it was purchased on the diggings as low as £2 16s. and sent to London to be sold for about £4. In this crisis it was evident that unusual measures must be taken to avert great financial disaster, and a Bill was introduced in the Legislative Council of South Australia making gold assayed and cast into ingots by a Government assayer a legal tender, at the rate of £3 11s. per ounce. The Banks were authorised to issue their new notes against such gold, and pay for the notes with the gold at the rate stated. Sir Henry Young assumed great responsibility in assenting to this Bullion Act, as it was called, for it was opposed to the currency laws of the British Empire, and repugnant to Imperial legislation; but he hazarded his own position to save the colony, and the Home authorities, recognizing the greatness of the emergency, did not disapprove of the action of the Governor. The Bullion Act was only to be in operation for a year. The banks asked the Government to extend the period of its operation, but this was declined, and a Bill was introduced and passed to legalize gold tokens representing twenty shillings each, calculating the value of the gold at the same rate as the ingots had been valued at. Not many of these tokens were issued, and now one is considered a curiosity. Its intrinsic value is about twenty-four shillings. This legislation raised the price of gold in Victoria, and before long the competition among buyers raised the price pretty nearly up to the full English value.

To facilitate the despatch of the gold obtained by South Australians to their own colony, an overland escort, first proposed by

Inspector Tolner, an able and daring police officer, was established, and proved of great benefit to the diggers, and their families, and to the colony. During 1852, most of the South Australian diggers came back, and remained in South Australia; others followed in 1853, leaving comparatively few behind them. The reason which operated, perhaps, more than the Bullion Act or the Gold Escort to draw them back to South Australia, was the land system of Victoria. With millions of acres of fertile land in that colony, it was almost impossible to buy an acre. The squatters claimed security of tenure or pre-emptive right, and this claim was upheld by a Government and a Council under squatting domination. But for this system, a large agricultural population would have been at once established, and the farmers would have had, in the diggings and the mining townships, splendid markets for their produce.

But Victoria's blunder and loss were South Australia's salvation. A large portion of the money obtained at the diggings was invested in farming land and farm stock. Agriculture made immense strides; for several years hay was worth £10 a ton in Adelaide, and £40 in Melbourne. Wheat was sold in the former city at from 8s. to 12s. per bushel; as late as 1856, the higher price named was obtained, and as much as 15s. 6d. was given in that year. Flour rose to £50 and £60 per ton in South Australia—I do not refer particularly to the prices on the diggings, as they were caused by the cost of carriage. In 1852, flour was worth £200 a ton at Bendigo. It was sold there at £20 per bag. The flood of prosperity that visited South Australia in those days led to much extravagance, but the beneficial effects to the colony were lasting; and though there have been dull times since then, there have been no serious panics.

In 1853 the colony had passed through the crisis caused by the diggings, and attention was turned to the Murray, or, to speak more comprehensively, the Riverina trade. More than thirty years before this time, the navigability of the Murray and its tributaries, the Darling and Murrumbidgee, had been ascertained by Capt. Sturt. There is some confusion as to the distances for which these rivers are navigable. Calculating all their windings, 4,000 miles would not be beyond the mark; but taking their more general course, about 1,500 miles should be deducted from this estimate. Some of their tributaries are navigable for a considerable distance for small

craft, but the quantity of water in them varies greatly, according to the seasons, and the Darling even is sometimes unnavigable for a year or two. Notwithstanding these drawbacks, the settlers in Riverina have been immensely benefited by the utilization of those rivers for the carriage of their produce. These streams, with their tributaries, drain over half a million square miles of country, principally in New South Wales and Queensland; and the trade of this vast region is what the South Australian Legislative Council bid for when it offered a reward of £4,000 for the first two iron steamers of not less than 40-horse power, and a draught not exceeding two feet of water when loaded, that should navigate the Murray from the Goolwa through Lake Alexandrina, and up to the Darling junction.

Mr. William Randall, an old colonist, who arrived in the colony as a boy in the year 1837, launched a little steamer at Mannum, a point above the lakes and about forty miles from Adelaide, and took it up the Murray and Darling, but his craft was too small to entitle him to the reward, which was won by Captain Cadell, who had previously, in a canvas boat, sailed down the Murray from a point above the junction of the Darling, and carefully examined the stream. He and the late Mr. William Younghusband, who subsequently was Chief Secretary of the colony, formed the Murray River Navigation Company, which placed a number of steamers on the Murray. The pioneer was the *Lady Augusta* named after the wife of Sir Henry Young, and on her first trip His Excellency and Lady Young and a large party of ladies and gentlemen were on board, Captain Cadell being in command. The pioneers in new enterprises are commonly sacrificed, and others enter into their labors, to profit by their mistakes and experience and the information they have given to the world. A few years after the trial trip of the *Lady Augusta* the company owning her was dissolved, and Captain Cadell had lost all he possessed: but the Murray navigation was a great fact, and the trade created thereby has gone on increasing from that day to this.

In connection with the Riverina trade arose the question of an outlet for it to the sea. The mouth of the Murray was practically unavailable. Small steamers were afterwards taken through it, but not with full cargoes, or loaded barges. It was necessary to land the wool and other produce at Goolwa, a point of the



Steamboat on River Murray.

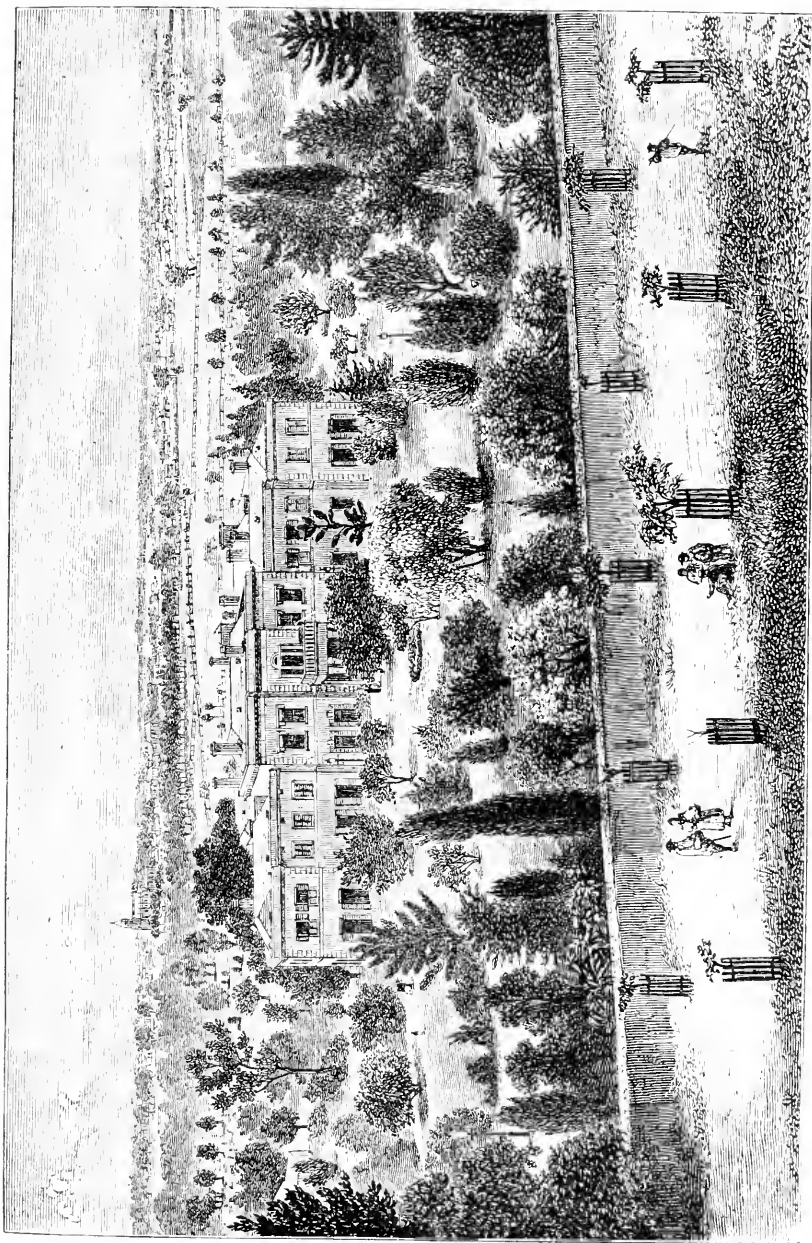
Murray after it has passed through the lake, and then carry it to the nearest ocean harbor. Sir Henry Young fixed upon Port Elliot as the harbor, and had a tramway constructed from Goolwa to that port, a distance of about eight miles. Strange to say, the harbor was reported favorably upon by Captain Lipson, R.N., the harbor-master of Port Adelaide, and Mr. Hill, a civil engineer. Thus encouraged Sir Henry Young expended £20,000 on a breakwater, and it was soon found that the place was utterly useless as a harbor, and that the outlay upon it was so much money thrown away. The Legislative Council protested against the whole proceeding, but the money was taken from the land fund, over which the Governor then had absolute control. Afterwards a little bay, four miles further from Goolwa, and now known as Port Victor, was chosen, and, though small, it is a safe harbor, and lately its safety has been increased by a breakwater a thousand feet in length, constructed at a cost of £120,000. Previously to the commencement of this work there had been a large expenditure on a jetty connecting Granite Island with the main land.

For some years after steamers were first placed on the Murray and its tributaries, the trade belonged to South Australia, but afterwards it was largely diverted to Victoria, that colony securing the greater share by the construction of a railway 160 miles in length, from Melbourne to Echuca. Most of the traffic, including all from the Murrumbidgee and Darling, must go up the stream to reach Echuca, and then there is the cost of the land carriage; but the attraction in this direction consists in the fact that Melbourne is a better market for the sale of wool, and, till lately, was a better port of shipment, having a large command of vessels at the lowest rates of freight. The South Australian trade was discouraged by want of shipping facilities at Goolwa and Victor Harbor, and by the high charges of merchants and agents. To secure the trade, it was proposed, about fifteen years ago, to construct a line of rails from Adelaide to the Murray, but this proposal was negatived, and the consequence was the loss of most of the trade. In 1878, a railway from Adelaide to the North-West Bend, a distance of 110 miles, was completed, and has been found a paying line. The river terminus is named Morgan, after the late Chief Secretary, Sir William Morgan, and there is naturally a keen rivalry between it and Port Victor. The imports of wool to

both places are largely increasing, but it is certain that South Australia did not begin to recover the trade till this line was laid down.

Sir Henry Young's régime was distinguished by the establishment of District Councils wherever the settlers desired them. These bodies are to the country districts what corporations are to towns, and the district roads throughout the most settled portions of the colony, as distinguished from the main roads—which are constructed and maintained at the cost of the general revenue, sufficiently attest the usefulness of these local representative bodies, and the judgment and economy with which the district councillors manage their affairs. On this subject Sir Henry was a great enthusiast, and though some of his expectations of results to flow from these councils were visionary, it is beyond question that by their establishment an addition that could be ill-spared was made to the institutions of South Australia.

Sir Henry Young was, in 1854, appointed Governor of Tasmania, and in December of that year, left Adelaide for Hobart. Mr. Boyle Travers Finniss, the Colonial Secretary, was sworn in as Acting-Governor, and held that position for nearly six months. The advances made in wealth and prosperity by the colony during the Governorship of Sir Henry Young, mainly owing to the Victorian gold discoveries, were immense. The population increased from 38,666 to 92,545; the revenue, from £82,911 to £595,356; the land alienated during the former year amounted to 29,200 acres, and in 1854 to 213,925 acres; land under cultivation increased from 48,911 acres to 129,692 acres; cattle, from 55,083 to 74,220; sheep, from 838,394 to 1,768,724; imports, from £384,326 to £2,147,107; exports, from £504,068 to £1,322,822. The staple produce exported, increased from £465,878 to £694,422. Two years later, the export of staple produce had doubled. The balance of exports in 1854 was composed mainly of Riverine wool. The export of mineral produce, through the closing of the mines, when the male population flocked to the Victorian diggings, sunk from £320,624 in 1848 to £94,831 in 1854. Three years later, it had risen to £458,839.



Government House and Grounds, Adelaide.

CHAPTER V.

1855 to 1862.

Sir Richard MacDonnell—New Constitution—Disputes between the two Houses—Real Property Act—Mineral discoveries on Yorke's Peninsula—The Wallaroo and Moonta mines—Exploration and Explorers—Gregory, Babbage, Warburton, and Stuart crosses the continent—Burke and Wills—Their sad fate—McKinlay—Howitt recovers remains of Burke and Wills—Northern Territory annexed to South Australia—First railway—Progress.

SIR Richard Graves MacDonnell arrived in the colony on the 8th June, 1855, and retained the Governorship for the unusually long period of nearly seven years. It fell to his lot to take part in the inauguration of Responsible Government. The people were strongly opposed to the principle of nominee legislators, and lost no opportunity of making known their feelings on this question; but nevertheless the mixed Council in 1853 framed a Constitution, of which one feature was that the Upper House should be composed of members nominated by the Crown for life. The protests of the people by petition and in public meetings had the desired effect, and the Constitution Bill was sent back to the Governor by the Secretary of State for the Colonies. In 1855 Sir Richard MacDonnell dissolved the Legislative Council, so that the voice of the people might be heard as to the sort of Constitution they wished themselves and their children after them to live under. The electors were almost universally in favor of manhood suffrage and vote by ballot, and put a final veto on nomineeism.

The new Council had a task of great difficulty and responsibility before them, but in the main they carried out the wishes of their constituents. They decided in favor of two chambers, and passed a Constitution Act and an Electoral Act. The former defined the suffrage, the constitution, powers, and privileges of the two Houses; the latter prescribed the mode of election, and the

rules affecting the electors, the elected, and the returning officers. The House of Assembly was to be elected on the basis of universal suffrage, that is to say, the franchise was given to every man 21 years of age who was a natural born or naturalized subject of Her Majesty, who had been six months on the electoral roll of any district, and was not under unexpired or unremitted sentence for any felony or infamous crime. Everyone qualified to be a voter for this House was qualified to be member of it, except that if not a natural-born British subject, he could not be elected unless he had been five years resident in the colony. The elections were to be triennial. The Legislative Council, commonly called also the Upper House, was to be elected on the basis of a property suffrage—consisting of either freehold worth £50; registered leasehold of £20 per annum, with three years to run, or right of purchase; or occupancy of a dwelling-house of the clear annual value of £25. The members were to be elected for twelve years, a third retiring every four years, the order of retirement being fixed by lot after the first election, when all were to be returned, and subsequently after each general election of one-third, or a casual election of more than one member. In case of a single election to fill a vacancy, the name of member then elected to be placed last on the roll, *i.e.*, last in the order of retirement. The Assembly was to consist of thirty-six members, elected by districts; the Legislative Council was to consist of eighteen members, returned by the electors of the whole colony voting as one constituency.

The salaries of the Governor, the Judges, and certain officials were fixed by this Act, and pensions were settled on those officials required to be in the ministry, in case of their losing their offices, so long as they were deprived of those positions; if they took other offices the pensions were merged in their salaries, or if the salaries were smaller, they were merged in the pensions. The Judges were to hold their offices during good behaviour, but nevertheless might be removed by Her Majesty upon the address of both Houses of the South Australian Parliament. Power was given to the Governor to dissolve the House of Assembly, but not the Legislative Council. All money Bills were to be initiated in the Assembly, and such Bills and all money votes, resolutions, or appropriations, must be recommended by the Governor, by message to the House of Assembly. Government officials, (except cabinet ministers,) judges, and

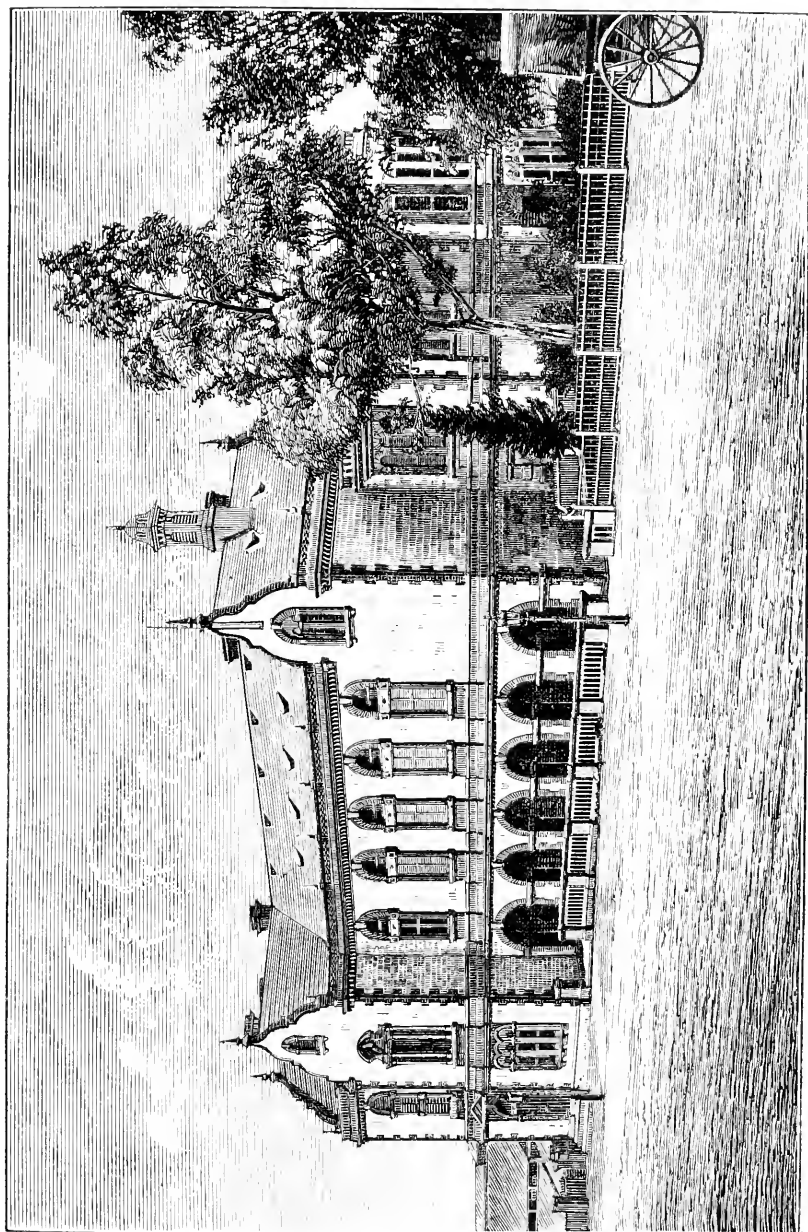
ministers of religion were not to be eligible for election to either branch of the Legislature. This Constitution continued in force without any important alteration for nearly a quarter of a century ; but in 1881, certain changes, which will be specified in another chapter, were made in the constitution of the Upper House. Ministerial responsibility is the same as in the old country, except that members on obtaining seats on the Treasury benches are not sent to their constituents for re-election. There were originally five Cabinet Ministers, namely, the Chief Secretary, the Attorney General, the Treasurer, the Commissioner of Crown Lands and Immigration, and the Commissioner of Public Works. A few years ago a sixth was appointed, an Act being passed to authorise this. His title is variable, and he may be appointed either as a Minister of Justice, or of Education, or of Agriculture. The present occupant of the office is Minister of Education, controls the postal and telegraph departments, and has charge of the Northern Territory. The Commissioner of Crown Lands looks after agriculture, and the Attorney General has the administration of justice in his department.

The Electoral Act of 1855-6 provided vote by ballot, prescribed the duties of returning-officers, dispensed with hustings nominations of the English style, forbade the appearance of any candidate at any election meeting after the issue of a writ for the election for which he was a candidate, except for the purpose of recording his vote, and contained stringent provisions against personal solicitation of votes by a candidate, or bribery by anyone. Nominations were to be in writing, and were to be read by the returning-officer on the day and at the hour appointed in the writ. This Act was superseded four or five years afterwards by another, and the electoral law has been amended and consolidated several times since then ; but the most important principles of the original Act have been preserved, though there have been great improvements in the machinery. Candidates are not debarred now from attending election meetings from the time the writ is issued ; but they must not attend such meetings within twelve hours before the nomination, and from then until the election is over, except for the purpose of voting.

The first elections for the two Houses took place in March, 1857, and the first Parliament met on the 22nd of the following month. Mr. (afterwards Sir) James Hurtle Fisher, was appointed

President of the Legislative Council, and Mr. George Charles Hawker was chosen as Speaker of the Assembly. The population at this time was not much over 100,000. During the first session the two Houses of Parliament came to loggerheads over their respective privileges with regard to money Bills. The Constitution Act provided that such Bills should be initiated in the Assembly, but placed no other restriction on the Legislative Council with regard to such measures; and as the Constitution was the creature of a Statute, the powers and privileges of each branch could only be found within the four corners of that Statute. All attempts to draw analogies between the Council and the House of Lords were rejected by the South Australian Upper House as simply absurd. However, the members of the Assembly were resolute, and a compromise was arrived at. The Council agreed not to make amendments in future, but to "suggest" them, and ask for a conference with the Assembly thereupon. This course has rarely been followed, and the practice will probably be abandoned altogether. Where the Constitution fails to prescribe the same rules with regard to the powers of the Upper House as obtain in the old country over financial measures, the defect has been, or will be, supplied by resolutions of the Assembly and submissions of the Council till the practice is established by custom, if indeed it may not already be regarded as so established.

The first session under the new Constitution was not entirely occupied in squabbles between the two Houses, for it was distinguished by the passing of the Real Property Act, one of the most sweeping and beneficial measures of law reform ever adopted in any country. The introducer of this scheme, as everybody knows, was Mr. (now Sir) Robert Richard Torrens, who carried it through Parliament against the powerful, and, in some cases, very bitter opposition of the legal profession. The system was briefly explained by Mr. Torrens as an assimilation of the mode of transferring real property to that of transferring ships, and though this notion was much ridiculed, experience has proved that in the majority of transactions in land the process is almost as simple as the transferring of vessels. The fundamental principle of the Act is conveyance by registration and certificate instead of deeds. All the retrospect is destroyed. In bringing private lands under the



Parliament Houses.

Act, the title is carefully inquired into, but when the authorities of the Lands Titles Office are satisfied about that, a clean certificate is given, and the cumbrous deeds disappear. The title is indefeasible, except in cases of fraud, or adverse and rightful possession when the certificate or a transfer based thereupon was given. In the former case the title is secure in the hands of an innocent person, who has purchased from the holder under a certificate fraudulently obtained. The party wronged, under such circumstances, recovers from the assurance fund, constituted by a percentage of a halfpenny per pound, levied on all property brought under the Act. That sum amounts to £75,919 13s. 11d.; only eight claims have been made upon it, and only £2,229 11s. 11d. paid in satisfaction of such claims. With regard to defeasibility through someone being in adverse and rightful possession, ordinary precaution would prevent anyone from becoming an unfortunate transferee under such circumstances. In the case of misdescription of boundaries they are corrected, but otherwise the title is indefeasible. The fees for transfer and mortgages are very small. A certificate of title costs £1; registering a memorandum of mortgage, 10s.; other fees in proportion, the expenses being greater by a pound or two in rescuing land from the old system and bringing it under the new. The assistance of a lawyer is not necessary; the transferor and transferee can act for themselves, or employ a broker licensed to conduct such business. Amending Acts have since been passed, but the cardinal principles of the first Act have been carefully preserved. The system has been adopted in all the Australian colonies, and has long been the subject of serious discussion in the old country, where its introduction is only a question of time. All the Crown lands sold since the passing of the first Act, in 1857, are under the Torrens system, and the quantity of land left under the old system is constantly diminishing, purchasers preferring the simple titles of the Real Property Act.

In 1860 the real value of the Wallaroo mines, on Yorke's Peninsula, were made known. Copper had been discovered on the land years before by Mr. W. W. Hughes, who was a large sheepowner there. He persevered in his endeavors to develop the mineral discovery he had made, and his enterprise and determination were rewarded. Great quantities of ore were raised from the original mine. There was a rush of prospectors to the Peninsula. Other

mines were found; speculation commenced; companies were formed; shares went up to great prices and went down again; townships were proclaimed by the Government, and land speculation was added to dabbling in mining shares. In 1861 the Moonta was discovered, and was richer than the Wallaroo mine. The right to this grand property was a matter of dispute and litigation, but it remained in the hands of the proprietors of the Wallaroo mine and some other persons, with whom they shared their good fortune. The Moonta never cost the original proprietors a farthing, and the shareholders have received in dividends £1,072,000. The dividends from the Wallaroo mines and the smelting works, owned by the same company, amounts to £372,256, no capital having been paid up. The immediate result of these discoveries was the settlement of about 20,000 people about the mines and the seaport of Wallaroo. Agricultural settlement followed and extended to the southern point of the Peninsula.

Great strides were made in the exploration of the continent, and especially of South Australian territory, while Sir Richard MacDonnell presided over the destinies of the colony. Augustus Gregory, Surveyor-General of Queensland, and formerly of Western Australia, proceeded from Brisbane to the Barco, which he followed down to Cooper's Creek, with which stream he found it to be identical, and then came to Adelaide, where he was warmly welcomed. Mr. Babbage and Major Warburton extended our knowledge of the far north in 1857, the former discovering some remarkable freshwater springs to the west of Lake Gairdner.

In May, 1859, Mr. Stuart, who was the draughtsman in Capt. Sturt's expedition fourteen or fifteen years before, started for the north coast, and got as far north as lat. $27^{\circ} 12' 30''$. He discovered more springs, several creeks, and good grazing country. In November of the same year he went to the westward of that line of route, and added to his knowledge of the interior. On the 2nd March of the following year, with two men and thirteen horses, he made another start, discovered rivers and mountain ranges, and a remarkable formation, which he named Chambers' Pillar, after his friend Mr. James Chambers, at whose expense mainly these explorations were conducted; passed 200 miles beyond the centre of the continent, and then returned prostrated by scurvy. Then the Go-

vernment took the enterprise up, and Parliament voted £2,500 to assist the gallant explorer in crossing the continent from south to north. In December, 1860, he was at Chambers' Creek, and started from there on New Year's Day, 1861, with eleven men and saddle and pack-horses. In May he discovered Newcastle Water, in lat. 17° 40' S. situated in splendid pastoral country; but although he made repeated efforts for six weeks to reach the coast, he failed. He returned to Adelaide on the 23rd September; but three months afterwards he was again at Chambers' Creek with a party of ten, and this expedition was entirely successful. The party found abundance of water and reached the River Roper on the 26th June, 1861, and bearing to the westward of north came to the ocean on the 24th July.

Burke and Wills, the ill-fated explorers, got to the Gulf of Carpentaria with two men named Gray and King in February, 1861, and returning died at Cooper's Creek, their lives being sacrificed to mismanagement, and to want of bush knowledge on the part of the gallant but impetuous leader.

John MacKinlay, with a small party, was dispatched by the South Australian Government in search of these explorers, who were supposed to have perished, or at least to be in great peril. Beyond Cooper's Creek he found the remains of Gray, who had succumbed to fatigue and hardships; so, thinking the whole party had perished, he made a dash for the north coast, which he reached some distance to the east of the Gulf of Carpentaria.

Howitt, from Melbourne, cleared up the mystery attaching to the fate of Burke and his two comrades. When they returned to their depôt at Cooper's Creek, having left the body of Gray in the wilderness, to the northward, they found that the portion of the expedition that should have remained at that depôt had deserted them. They endeavored to reach the nearest squatting stations of our colony, but were obliged to give up the attempt, and return to Cooper's Creek, where Wills and Burke successively died, leaving King the sole survivor, who was rescued by Howitt. Howitt afterwards conveyed the remains of Burke and Wills to Adelaide, whence they were taken to Melbourne and honored with a public funeral and a monument.

As a consequence of Stuart's discoveries, the Northern Territory—that is all the country between Queensland and

Western Australia, and north of the 26th parallel of latitude—was annexed to South Australia.

The first railway in the colony—that connecting Adelaide with the Port—was opened soon after Sir Richard MacDonnell's arrival. Before he left lines were completed to Gawler and Kapunda.

The colony made great progress during Sir Richard MacDonnell's rule. Since Sir Henry Young left, at the end of 1854, the population had increased nearly 50 per cent, but the revenue had decreased; owing to the people having recovered from the excitement and extravagance caused by the diggings, they consumed less duty-paying luxuries, and an alteration in the tariff also affected the Customs receipts. There was a slight increase in the quantity of land alienated, but the area under cultivation had increased from 129,692 acres to close upon half a million acres. Cattle had increased from under 80,000 to 258,342, and the sheep from about a million and three-quarters to nearly three and a half millions. The staple produce exported rose from £694,422 in value to £1,920,487. Copper exports rose from £316,217 to £633,241; two years later they had advanced to £1,464,598.

CHAPTER VI.

1862 to 1869.

Sir Dominic Daly—The Judges—Mr. Justice Boothby—Invalidity of South Australian Acts—The “*ultra vires*” and “repugnancy” mania—Removal of Mr. Justice Boothby—Validating Acts—Local Courts—Expedition to the Northern Territory to establish a settlement—Disputes—Recall of Mr. Finnis, the Government Resident—John MacKinlay’s expedition—Captain Cadell—The Squatters and Goyder’s valuations—Visit of the Duke of Edinburgh—Parliamentary contests, generally about nothing—The Governor’s death—Progress.

SIR DOMINIC DALY arrived in the colony on the day on which his predecessor left, March 4th, 1862, his last Governorship previously having been Prince Edward’s Island. He had been trained in a constitutionally governed colony, having occupied an important official position in Canada, in the troublous times of Lord Durham’s rule. On Responsible Government being granted to Canada, he was chosen, at the first elections, to represent a constituency, and held office in the Ministry for some time. Not exhibiting in any high degree the gifts of a public speaker, he nevertheless possessed great sagacity and firmness as a ruler, and these qualities were required during his tenure of the gubernatorial office in South Australia, for some of the matters he had to deal with were of no small importance, and special difficulties and responsibility were attached to them.

The Governor’s first great trouble was with the judicial bench ; and as the representative of the Sovereign, and the ruler of a people whose instinct it is to reverence the ermine, he had to avoid even the appearance of impairing the independence of the Judges, while at the same time upholding the principle that the law is above even the Judges, and that their duty is to administer and not to obstruct it. For the first few years of the colony’s history there was only one Judge, but as the work of the Supreme Court increased, it was thought desirable to have a second, and in Feb-

ruary of the year 1850, Mr. Crawford, an Irish barrister, was appointed as a colleague of Mr. (now Sir Charles Cooper), who succeeded Sir John Jeffcott, the first Judge of South Australia. Mr. Justice Crawford died in the colony in September, 1852, and Mr. Benjamin Boothby, Recorder of Pontefract, was chosen as his successor, and arrived in the colony in the following year. Soon after his arrival he manifested a dislike to colonial enactments, which he did not attempt to conceal, and this tendency constantly increased.

In 1858 Mr. Gwynne, a leading practitioner at the bar was appointed Third Judge under authority of an Act of the South Australian Legislature passed in that year. In 1861 Sir Charles Cooper resigned the Chief Justiceship; and Mr. (afterwards Sir) Richard Hanson, who had occupied the office of Advocate-General for six years, and, subsequently to the introduction of responsible Government, that of Attorney-General for several years till the Ministry of which he was a member went out of office, and was recognised as the leader of the bar, and the foremost politician of the colony, was appointed his successor. Against this appointment Mr. Justice Boothby protested as wholly illegal, but his colleagues overruled him. After this his astuteness in discovering in colonial Acts repugnancy to Imperial law became intensified till the words "repugnant" and "*ultra vires*" seemed to figure necessarily in the proceedings of every sittings of the Supreme Court. He declared on the Bench that the appointment of Mr. Justice Gwynne, as well as that of the Chief Justice, was invalid, and that they were not Judges at all. Twice the Parliament passed addresses for Mr. Justice Boothby's removal from the Bench, but in vain. He had warm defenders in Parliament, and one Ministry resigned on account of differences of opinion in Cabinet with regard to the action to be taken upon addresses for the Judge's removal. Some of his decisions against the validity of South Australian Statutes were confirmed on appeal to the Privy Council, and this greatly encouraged him in his warfare against things colonial. Several validating Acts were passed by the Imperial Parliament to give force to South Australian laws, or remove doubts concerning them. Still the Judge was not more practicable. Suitors suffered seriously from the delays and obstruction in the Supreme Court, and at last business in that tribunal

was brought into such a condition that it was necessary for the Executive to take decided action.

Several years before Mr. Justice Boothby arrived in the colony grand juries had been abolished, the Parliament regarding them as useless. Soon, if not immediately, after his arrival the Judge expressed his strong disapproval of this innovation, but still he tried prisoners without grand juries for about thirteen years, and then at a particularly heavy criminal sittings declared that the accused persons on the calendar could not legally be tried without a grand jury. They were all kept in gaol or had their bail renewed, as the case might be, till the next criminal sittings, when another Judge tried them. This was the occasion of the second unsuccessful Parliamentary Address to the Queen for Mr. Justice Boothby's removal. He was not allowed to preside at a criminal sittings again; when his turn came round he was prevented by a Special Commission to the Chief Justice, directing him to try the prisoners. In 1867 the patience of the Judicial Bench, the bar, and the colonists was exhausted.

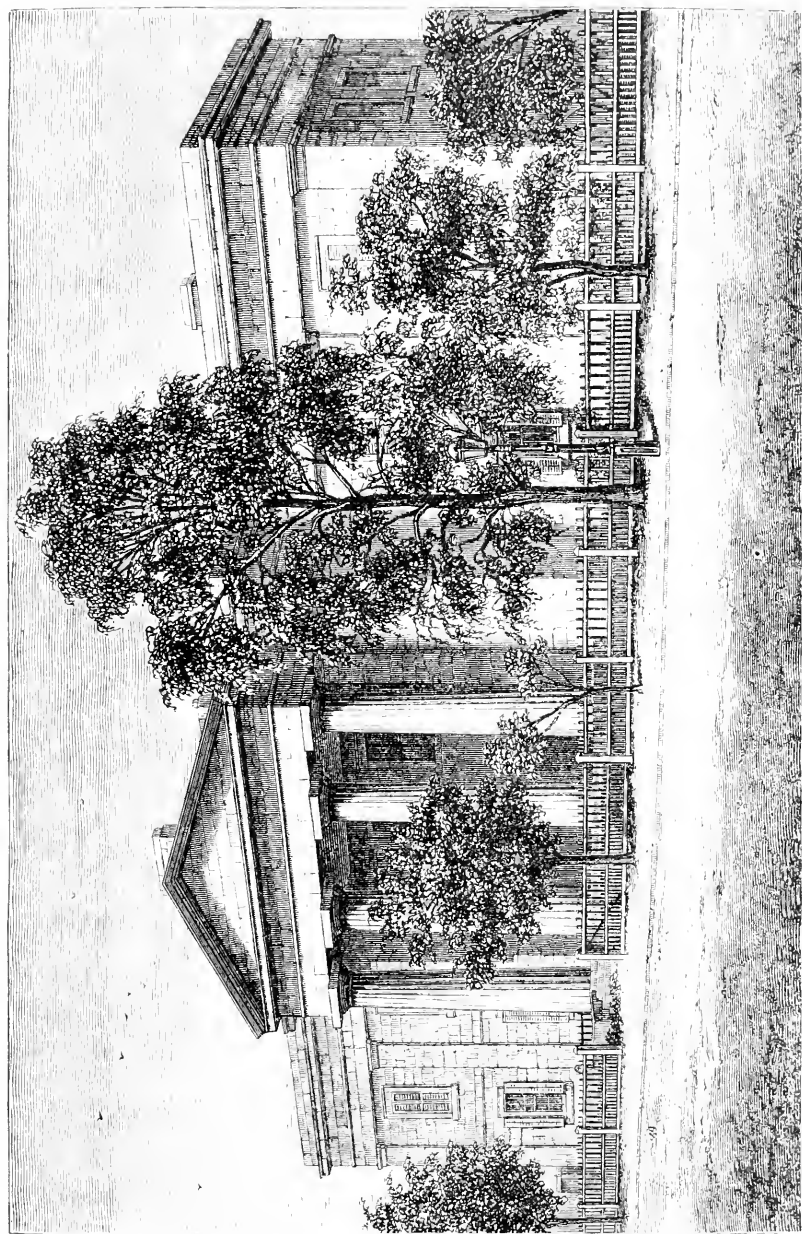
Charges were made against Mr. Justice Boothby of obstructing the administration of justice, and of unseemly conduct on the Bench, as exhibited in his demeanor towards his colleagues and towards counsel. These charges were dealt with by the Executive Council under the authority of an Act of George III., the Governor presiding, and the Judge was "amoved." The Crown Solicitor, Mr. Wearing, afterwards drowned in the wreck of the *Gothenburg* in Torres Straits, was appointed to succeed him.

Out of all this trouble some benefit accrued to the colony. The amoved judge had accurately ruled that, owing to some omission in bringing the new Constitution into force, the Legislature itself was invalid, and this defect was remedied by the Imperial Parliament. The repugnancy nuisance was effectually disposed of. Nothing can now be ruled repugnant unless it is so to an Imperial Act specifically applying to the colonies. The last Imperial validating statute was of a most comprehensive character. With the exception we have stated, no colonial Act can be ruled invalid after receiving the Queen's assent, or after a proclamation that she has not exercised her power of disallowance.

The greatest inconvenience and alarm was caused in the year

1865 by a decision of the majority of the Judges—namely (Justices Boothby and Gwynne) that the South Australian Legislature had no power to establish Courts of Judicature. This invalidated all the Local Courts of the colony, they having jurisdiction in civil cases up to £100, and the Insolvency Court. The Imperial Validating Act however, settled this difficulty, greatly to the relief of suitors in particular and the public generally. The powers of the Local Court of Appeal were enlarged by an Act of the South Australian parliament passed in 1861. This anomalous tribunal consisting of the Executive, of whom nearly all are laymen, owes its continued existence to the recollection the colonists have of the “repugnancy” and “*ultra vires*” troubles.

About two years after Sir Dominic Daly's arrival, the first two expeditions were despatched to the Northern Territory to establish a settlement there. This was a necessary consequence of the annexation of that portion of the continent to South Australia, for it was never supposed that the Territory would be allowed to remain undeveloped. In April, 1864, a party of about forty officers and men, under the command of Mr. (soon afterwards the Honorable) B. T. Finnis, was despatched by the sailing vessel “Henry Ellis” to the north coast. Mr. Finnis was appointed Government Resident, and was to go in the first instance to Adam Bay, which was strongly recommended as the site for the capital; but he was to secure certain advantages in the harbor and the locality chosen for the first settlement, and was free to select any other spot instead of Adam Bay. He remained there, however, against the protests of the representatives of land order holders, who arrived with a second party of about forty officers and men in December of the same year, and against the opinion of nearly all his officers. Disagreements arose in the party; scarcely any progress was made in the surveys; and late in 1865 the Hon. B. T. Finnis was recalled and Mr. John MacKinlay was sent to explore the country. Unfortunately he was despatched at such a period of the year that he arrived at Adam Bay just before the commencement of the rainy season. He travelled with his party south eastward, and they were imprisoned on the bank of the East Alligator till they had eaten most of their horses. Then under the direction of their leader, ever fertile in expedients, and the cleverest bushman Australia has produced, they killed the rest of the horses, dried the



Local Court. Adelaide.

flesh for food, and with the skins and saplings constructed a launch, with which they sailed down the river and along the coast to Adam Bay. MacKinlay afterwards examined Anson Bay, of which he gave a favorable account. While he was in the Territory, a Commission, appointed to inquire into the whole administration of affairs at Adam Bay, condemned the site and Mr. Finmiss' management of affairs. Mr. Manton, the second in command, remained in charge until it should be decided where to fix the capital. About 15,000 acres of land were surveyed, besides the town, and then nothing more was done for several years. At last the party were brought back, and for a year not a European was in the Territory. Captain Cadell was sent to explore the coast, and he furnished a report principally relating to the Gulf of Carpentaria. Nothing more was done to settle the Territory during Sir Dominic Daly's life.

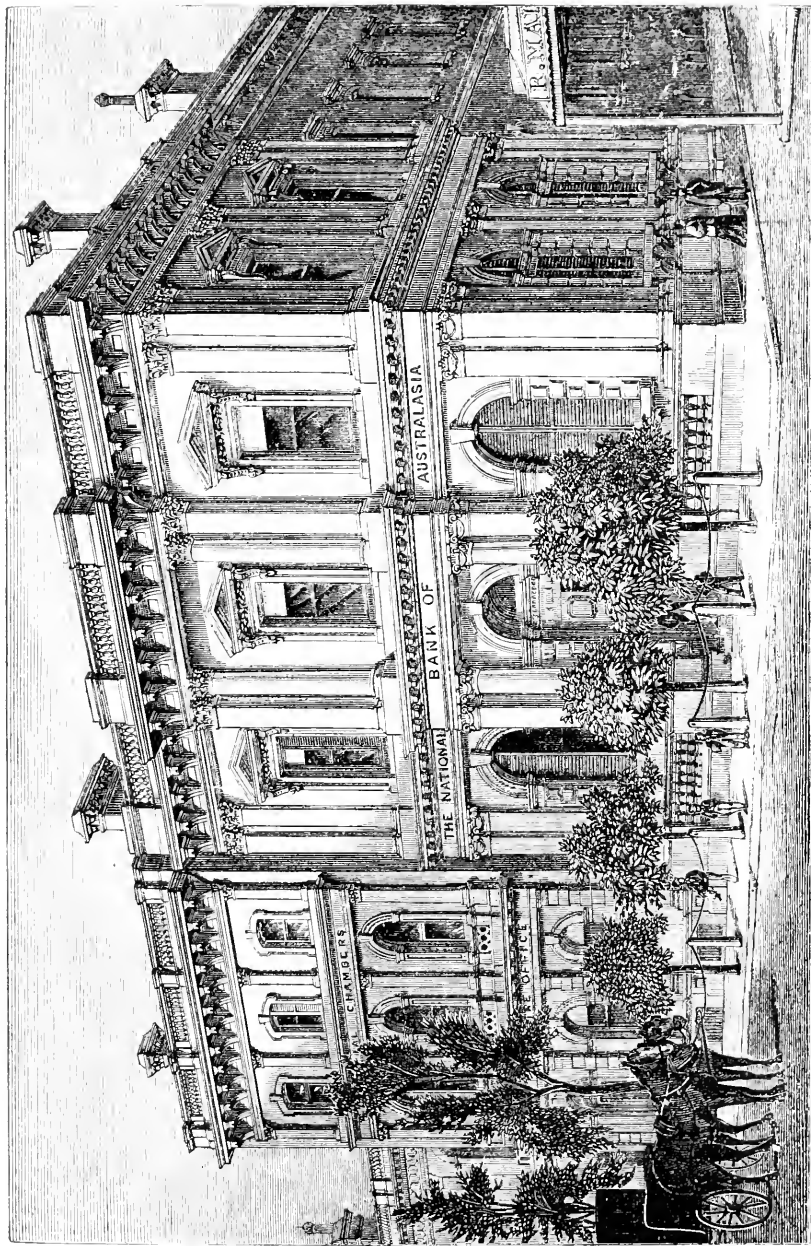
One matter of great consequence that had to be dealt with during Sir Dominic's Governorship, was the rent to be imposed upon the pastoral lands held by the squatters. They had paid a trifling rent, but the attention of the public and Parliament had been called to the practicability and propriety of the State receiving a fair revenue from the waste lands engaged by the shepherd kings, and Mr. Goyder, the Surveyor-General, was employed by the Government to value the runs, or estimate the rent that should be paid upon them. His valuations were denounced by the persons affected as exorbitant and unjust, but they were confirmed. The dispute was very warm in and out of Parliament, and several years later the squatters in the district country to the north, north-east, and north-west received large concessions in the shape of remissions of rent, owing to their heavy losses sustained through a severe and protracted drought.

In 1867 a notable event in colonial existence was the visit of His Royal Highness the Duke of Edinburgh, the first member of the Royal Family who had visited Australia. The Prince was received with great enthusiasm, and during the few weeks he was in the colony, saw a great deal of it. He officiated at various important public ceremonies, and laid the foundation stones of the college which bears his name, and of the post office, which is a noble building, considered by some people too magnificent for the requirements of the colony. It is, however, more than a post

office ; it is also the general telegraph office, and furnishes accommodation for the Education Department.

The Parliamentary proceedings during Sir Dominic Daly's administration, as a rule, possessed only ephemeral interest. Apart from the judicial difficulty, there could hardly be said to be any great questions disposed of. There was brilliant debating, especially in the Lower House, but a stranger at the time witnessing, or a colonist looking back upon those animated contests, could hardly tell exactly what they were all about. Ministries were changed rapidly, sometimes for not very sufficient causes, but their advent to office or ejection from it did not mark the triumph of any important principle. The Governor was calm and impartial throughout all the strife, and thoroughly loyal to whatever ministry was in power. During the last year or two of his administration, his health failed rapidly, and on the 19th February, 1868, he died at Government House. The colonists mourned their loss deeply, for Sir Dominic Daly was respected and trusted as a Governor, and his genial though dignified manner, and the evident interest he took in all movements calculated to benefit the colony made him universally popular.

The colony had continued to progress under Sir Dominic Daly's rule, though not so rapidly as during the previous half dozen years. The population had grown from 135,329 in 1862, to 176,298 in 1868 ; the revenue had increased from £548,709 to £716,004 ; in 1865 it was £1,089,129. It must be observed, that in these statements of revenue proceeds of land sales are included. The land alienated in the first-named year amounted to 129,910 acres, and in 1868 to 199,693 acres. Land under cultivation increased from 494,511 to 808,234 acres ; cattle decreased from 258,342 to 123,213, but sheep increased from 3,431,000 to 4,987,024. Exports of staple produce advanced in value from £1,920,487 to £2,603,826. There had, owing to a bad harvest, been a fall in the export of breadstuffs, but the wool shipment had risen from £635,270 to £1,305,280. The progress in railway construction was slight, only four miles more were open for traffic in 1868 than eight years previously. The total length of our lines at the end of the last year was sixty miles.



National Bank of Australasia



CHAPTER VII.

1869 TO 1873.

Colonel Hamley—Strangways' Act—Killing a squatter—Sir James Fergusson—Further amendment of the land system—The transcontinental telegraph—Gold discoveries in the Northern Territory—Forrest's journey by Eyre's route from Western Australia to Fowler's Bay—Railways Progress.

SIR James Fergusson, Bart., now Governor of Bombay, who was appointed to succeed Sir Dominic Daly, did not exhibit any impetuous haste to enter upon his new sphere of activity, for the Acting Governor, Lieutenant-Colonel Francis Gilbert Hamley, who was sworn in on the 20th February, 1868, held office for nearly twelve months, Sir James not arriving till the 14th February of the following year. Colonel Hamley won golden opinions from the colonists while he held the reins of power, and he steered safely through the difficulties attending two ministerial crises and changes of Cabinet. During his rule the first substantial reform in the land system of the colony was effected. At this time farmers wished to get their land cheaper than hitherto, but the price obtained for the land by the Government was of minor consequence; the real grievance was the impossibility of the *bonâ fide* farmer competing at all with the squatter and the capitalist in the auction room. From the foundation of the colony until the passing of the Waste Lands Act of 1868-9, the average price per acre, including town lands, obtained by the Government was only £1 5s. 6d.; but the farmers paid to the capitalists and land jobbers £3, £5, and up to £10 an acre, and occasionally even higher rates. The State profited nothing by the existing system; the farmers and the country suffered greatly. The leading object of reform then was to protect the agriculturists from the competition they had been subjected to at land sales. For this object what is known as Strangways' Act was passed, and, since then, with competition limited to farmers, the average price of land up to the end of 1882

was £1 6s. 10d., so that 1s. 4d. more per acre has been obtained under the reformed system for lands inferior in quality or position than was given for the pick of the country at open auction. The legislator whose name this Statute bears had never distinguished himself by any earnestness in the cause of land reform; but having induced the Assembly to eject a Ministry that was in earnest in its endeavors to accomplish that great object, he formed a Cabinet, and carried through Parliament the first Act that made special provision for the encouragement of agricultural settlement. Previously, till within a few years, it was generally held as a sound principle, that all the State had to do with the land was to sell it, without troubling about the uses to which it was put afterwards, or whether the progress of agriculture was promoted or impeded by the operation.

"Killing a Squatter," was a favorite device with impecunious Treasurers in those days. Money was wanted, so a sheep or cattle run leased from the Government was declared a "Hundred,"—the lessor having the right to resume the land for agricultural purposes,—surveyed, and offered for sale by auction, when of course the squatter secured all he could afford to purchase; land-sharks grabbed the rest, and the farmers, who would have gladly given more than the average price obtained for the land, could not compete with the moneyed men. In this way, some of the large estates of 40,000, 50,000, and 60,000 acres, in this colony, have been acquired.

All this was changed in 1869. Though Strangways' Act was far from perfect, and led to dummyism, or the acquisition of estates by monopolists, through the medium of sham purchasers, still it broke up the old system, and further reforms quickly followed. The Act established sales on four years' credit, for the full amount of the purchase money. Five per cent. per annum was charged, and the four years' interest had to be paid in advance at the time of purchase. Land might be so sold, on credit, at auction sales; but agricultural areas were proclaimed, and the lands within them could not, in the first instance, be offered at auction, but were open for selection, and simultaneous applications for a particular block, were decided by lot. Land that had been passed at auction, might be selected immediately. Lands in the Agricultural Areas that had been open for selection for two years, at £1 per acre, and not

taken, might be sold by auction. In these areas the lands were classified and priced accordingly. If not selected, the price was lowered once, twice, or oftener, till the minimum of £1 was reached. No person might hold at one time more than 640 acres on credit. There were residence and improvement conditions.

Many genuine farmers availed themselves of this Act, which gave a great impetus to agriculture; but it was soon found that it gave enormous facilities to land monopoly. The term of credit was too short, and at the end of four years, the dummies sold to their employers; and perhaps some selectors who had started with the intention of holding their lands as farmers, were tempted by high prices, to sell to the capitalist or squatter. Then, although a person might not have more than a square mile on credit at one time, he might, as soon as he had sold it, get another on credit. As a consequence of these weak points in the measure, the land jobbers were uncommonly active, and an amending statute was seen to be of absolute necessity.

A few months after Sir James Fergusson assumed office as Governor, a short amending Act was passed. The term of credit was extended from four to five years, with a right of renewal for three years. The amount of interest to be paid in advance at the time of sale, was reduced from four to three years. The sum to be expended in improvements during the first four years was lowered from 12s. 6d. to 10s. per acre. The selector might complete his purchase at the end of three years if he had laid out 10s. per acre on improvements, and fulfilled the other conditions of the lease. This little Act, it will be seen, did not heal the defects of the former measure in any material degree, or make dummyism and the accumulation of estates by land monopolists less easy. In the session of 1870-71, another amending Act was passed. It reduced the interest to $3\frac{1}{2}$ per cent., and required three years' interest to be paid in advance at the time of sale. At the end of the three years an equal amount of interest had to be paid in advance. So carelessly was this statute drafted, that it professed to define the terms "cultivation" or "cultivate" in the Act of 1868-9, whereas neither of those terms appeared in that Act.

In 1872, an amending Act, on a larger scale, was passed relating to the sale of waste lands for farming purposes. It repealed Strangways' Act, and the statutes amending it, and made other

provisions in lieu thereof. It left untouched the Scrub Lands Act of 1866—that I have not hitherto referred to—which provided for the leasing of inferior or scrub lands in square mile blocks, for 21 years, at 10s. per square mile, with right of purchase at any time during the currency of the lease, at £1 per acre. The minimum price of land was kept at £1 per acre, and the maximum at £2. If offered at any price above a pound, the price was to be reduced by 2s. 6d. per acre every seven days, till the minimum was reached. In the case of reclaimed or improved lands, the cost of reclamation or improvements was to be added to the price. Selection by application, and determination by lot, between simultaneous applications, were preserved. The area to be held by any person, on credit, was kept at 640 acres. Six years' credit were still given, there being two payments of three years' interest at $3\frac{1}{2}$ per cent. in advance. At the end of six years, however, the selector might pay half his purchase money, and obtain four years credit for the other half at 4 per cent. interest, payable annually in advance. Residence, cultivation, and improvement conditions were retained, but the residence conditions might be relaxed by the Commissioner of Crown Lands in certain cases, when substituted residence would be permitted. This Act contained stringent clauses against evasions of its provisions. Auction sales were still continued for cash and on credit, and there were special provisions in former statutes with regard to town, suburban, and mineral lands.

In 1869, the Government determined to survey the land they had covenanted to convey to the holders of Northern Territory land order holders, and despatched Mr. Goyder for that purpose. As a compensation for the delays that had occurred, they were offered double the area they agreed to take for the same lump sum, but most of the purchasers demanded their money back and got it, after litigation. I must, however, reserve fuller notice of the Northern Territory for a subsequent chapter, specially devoted to that portion of the Province.

It fell to Sir James Fergusson's lot, as Governor of South Australia, to inaugurate the establishment of telegraphic communication between Australia and the old world. The honor of first suggesting this bold enterprise undoubtedly belongs to Mr. Todd, who, as a consequence of Gregory's journey from Victoria River across the continent to Adelaide, wrote in the year 1859 to

the then Governor, Sir Richard MacDonnell, urging that the work should be undertaken, setting forth the advantages of the scheme to South Australia and the whole group of colonies, and giving an estimate of the cost, which he considered would be about £178,000. His project was to start from Mount Remarkable, about 190 miles from Adelaide, and construct the line from that point to the River Victoria. The Governor, in a despatch dated October 10th, 1859, submitted this project to the consideration of the Duke of Newcastle, Secretary of State for the Colonies. Two or three years later Mr. Todd read a paper before the Adelaide Philosophical Society on the scheme, detailing the manner in which he proposed to carry it out. Of course the work was made much simpler and easier by Stuart's feat of crossing the continent and reaching the Indian Ocean about Van Dieman's Gulf in 1862, and by the subsequent annexation of the Northern Territory to South Australia. In 1870 the work was commenced. Queensland had hoped that the cable would be brought to her territory, but Mr. Todd, Superintendent of South Australian Telegraphs, successfully negotiated with Mr. Noel Osborne, the representative of the British Australian Telegraph Company, who called at Adelaide on his way to Brisbane; and an agreement was entered into by which that company undertook to lay the cable to Port Darwin, where it was to be met by the land line from Port Augusta. It was a bold enterprise for a little colony with a population of about 150,000 to undertake the construction of 1,800 miles of telegraph through a country most of which was a *terra incognita*, or at least had not been travelled through by any white men except the explorer Stuart and his gallant band. For a great part of the region to be traversed water was scarce, and the natural supplies many miles apart. Some of the wooden poles had to be carted great distances, up to a hundred miles, and for a large portion of the line iron poles were used.

The work was divided into three sections. The southern and northern sections, about six hundred miles each, were let to private contractors, the Government undertaking the central portion. The whole work was under the superintendence of Mr. Todd. The Government section was constructed most rapidly; it was finished within the period allotted for the completion of the whole line, and the party also constructed about two hundred

miles of the northern section. The southern contractor was but little behind his time; but the northern contractor, who had the easiest portion of the line, failed utterly, and it was necessary for the Government to take the work into their own hands. The Assistant-Engineer, Mr. Patterson, was despatched to Port Darwin with a strong party; but selecting that port as a base of operations was a great mistake. The contractors had put up the line for a distance of about seventy miles from Port Darwin inland, and the materials and men to proceed with the work from that point should have been taken to the Gulf of Carpentaria and up the Roper River, so saving about 200 miles of cartage. Mr. Patterson's party failed as completely as the contractors had, and Mr. Todd was then placed in charge of another expedition, which he took up the Roper, and after a little delay, through a very wet season, carried on operations with great activity and without further hitch.

The line was to have been finished in twenty months, and open by the 22nd August of that year. The Cable Company had been waiting and complaining, but strange to say, when the land line was finished the cable communication was interrupted and was not restored for two months afterwards. The opening of telegraphic communication with the whole world was celebrated by a banquet at the Town Hall of Adelaide, presided over by Sir James Fergusson, who announced that Her Majesty had, in honor of the great work completed bestowed upon Mr. Henry Ayers, who was Chief Secretary at the time, a knighthood, and upon Mr. Todd the title of C.M.G. It should be mentioned, that Mr. Strangways was Premier when it was resolved to commence the work, and that Sir James Fergusson gave his warmest support to the scheme, which was also strongly advocated by the late Mr. John Hart, Mr. Ross, and other prominent public men.

Since the opening of the line, the interruptions have been rare and brief, especially on the land line, which is the most reliable of any intercolonial wire in Australia. The amount first voted by the South Australian Parliament for the undertaking was £120,000, but it has cost over half a million, the extraordinary excess over the estimate being caused principally by the blunder in sending Mr. Patterson to Port Darwin instead of the Roper, and by the ravages of the white ants rendering it necessary

to substitute iron for wooden poles along hundreds of miles of the line.

The telegraph does not directly yield revenue enough to pay much more than working expenses and interest on the cost of construction, but its indirect benefits have been immense. Apart from the gain to commerce necessarily arising through the electric wire with Europe and the rest of the world, this line has facilitated exploration, promoted pastoral occupation of the interior, and largely aided in the settlement of the Northern Territory. While the project was warmly recommended by the Governor and several leading politicians of the colony, to Mr. Todd must be awarded the chief merit for carrying to a successful issue so bold and difficult an enterprise. It would be impossible to overpraise the intelligence and readiness of resource displayed by his officers, or the qualities of pluck, endurance, determination, and discipline they exhibited, in common with the men under them, throughout the arduous undertaking by which they laid not only their own colony but all Australia under a deep debt of obligation, that can hardly be exaggerated.

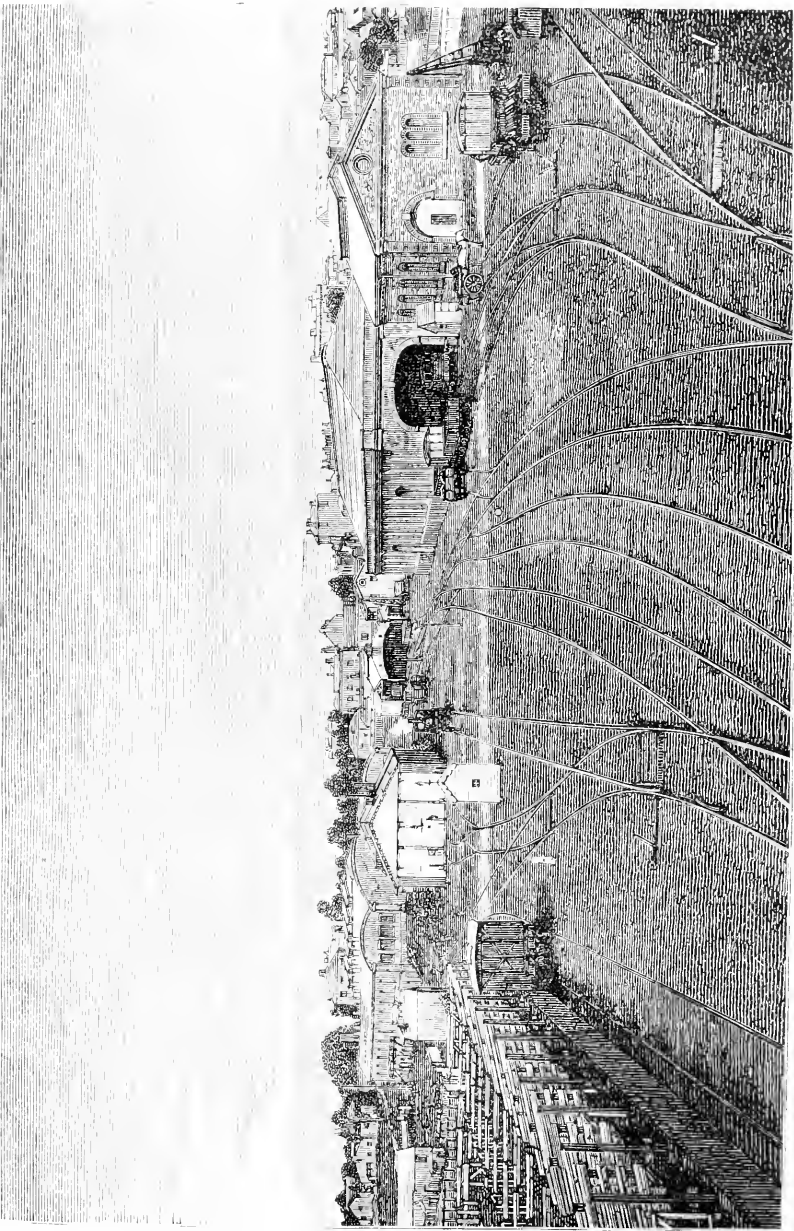
Some of the men employed on the Northern Territory portion of the work discovered gold, which led to prospecting parties examining the country; and their reports and finds produced a rush and a mining scrip mania in the years 1872 and 1873, followed naturally by a panic in shares, and a collapse. Since then, however, mining in the Northern Territory has been conducted in a more legitimate manner with considerable success.

Mr. John Forrest's journey from King George's Sound to Fowler's Bay, along the coast, by the route Eyre travelled thirty years before, was accomplished in 1870. The earlier explorer's descriptions of the country were fully confirmed. There was good grass land in some parts of the territory traversed, but a scarcity of water, which was only obtained in the sandhills close to the sea. From Fowler's Bay the explorer and his party proceeded to Denial Bay, then across to Port Augusta, and from there to Adelaide, where they met with a cordial welcome.

During Sir James Fergusson's régime, the railway from Adelaide to the Burra was completed, also the tramway from Strathalbyn to Middleton, where it joins the line of a similar character connecting Goolwa with Port Victor. Sir James saw an

increase in the length of our iron roads from 60 to 133 miles. In neither total are included the private tramways on Yorke's Peninsula, several years ago purchased by the Government, and altered so as to bear locomotive traffic. Sir James advocated a bold public works policy, somewhat on the lines followed three years after he left the colony.

The date of his departure was the 18th April, 1873. Since 1868, the year of Sir Dominic Daly's death, the population had increased by about 22,000 persons, and had nearly reached 200,000. The revenue rose from £716,004 to £972,814. Land alienated, 199,693 acres in the former year and 357,594 in the latter, showing the effect of the amendment of the land system. In the same period the land under cultivation increased from 808,234 to 1,225,073 acres. Cattle increased from 123,213 head to 174,381, and sheep from 4,987,024 to 5,617,419. There was an increase in staple exports from £2,603,826 to £4,285,191.



Railway Station Yard, Adelaide.

CHAPTER VIII.

1873 to 1877.

Sir Anthony Musgrave—The Chief Justice—The Boucaut policy—Wreck of the *Gothenburg* and loss of lives, including Judge Wearing and the Hon. Thomas Reynolds—Mr. R. I. Stow appointed judge—New Parliament—Increase in number of members—The Blyth Ministry defeated and succeeded by the Boucaut Cabinet—Stamp Duties Bill rejected by the Legislative Council—Second session, and Bill again rejected—Mr. Boucaut refuses to proceed with his Public Works Bills—Education Act—Sir Richard D. Hanson's death—Mr. Way appointed Chief Justice—Mr. Boucaut constructs new Ministry, without any of his old colleagues—Ejected from office—The Colton Ministry—Stamp duties abandoned—Probate and Succession Duties carried—£3,000,000 borrowed—Railway Bills carried—First Private Tramway Bill—New Tariff—Border Duties Convention—Sundry legislation—Sir Anthony Musgrave's departure—Eucla telegraph—Progress.

SIR JAMES FERGUSON'S term of office expired on the 18th April, 1873, but he left the colony on leave of absence on the 7th December of the previous year. He was succeeded by Mr. Anthony Musgrave, who took the oaths of office on the 9th June, the Chief Justice, Sir Richard Davies Hanson, having administered the government during the seven months' interregnum. Mr. Musgrave's last Governorship previously was of Natal, and before then his official experience had been in the West Indies. During his stay in South Australia he received the honor of knighthood. His rule in South Australia was of an eventful character. The political crises had some interest on account of the issues at stake, and a new, bold, and comprehensive public works policy was inaugurated, from which the colony received a great impetus, and at the same time incurred the responsibility of a heavy debt—which, however, is nearly all represented by substantial improvements, and of these a large portion return a direct income above working expenses, independently of the indirect advantages arising from roads, railways, telegraphs, and harbor improvements. During the first two years of Sir Anthony Musgrave's rule, Mr. (now Sir)

Arthur Blyth's Ministry was in power, and the main ground of attack on the part of the Opposition was that the Government lacked decision and boldness, did not appreciate the capabilities of the country, and neglected to carry out with energy those great works essential to the proper development of the vast resources of South Australia. Mr. James Penn Boucaut, now a Judge of the Supreme Court, though perhaps not absolutely the originator of the policy which bears his name, and the adoption of which marks an important era in the history and advancement of the colony, nevertheless formulated it, presented it to the consideration of the electors, expounded and defended it, and aroused public enthusiasm on its behalf. In 1875, at the general election for the Assembly, it was evident that Mr. Boucaut and his policy had carried the day, and from that time the Blyth administration was regarded as moribund.

In that year a great calamity overtook the colony. Mr. Justice Wearing was despatched by the steamer *Gothenburg* to the Northern Territory, to hold a circuit court at Port Darwin. He was accompanied by Mr. Pelham, Judge's Associate, and Mr. J. J. Whitby, a practitioner of the Supreme Court, who had engaged to act as Crown Prosecutor. On the return voyage there were a number of well-known colonists on board, who were coming back to Adelaide. Among them were the Hon. Thomas Reynolds, who had for years been a leading politician, had held office in a number of Ministries, of two of which he was Premier, and his wife; Dr. Milner and his wife; the wife and family of the Government Resident, Mr. Price. All these and other South Australians, whose names were familiar to the public, besides the Judge and Messrs. Pelham and Whitby, were drowned. The captain, though a reliable able seaman, got out of his course and was too far to the eastward, when, on the evening of the 24th of February, the steamer struck upon a reef. At first, though the weather was rough, danger was not suspected, but the wind increasing in violence, heavy seas broke over the vessel and she became a total wreck. Only twenty-two of the passengers and crew were saved; they escaped in boats, and the lost numbered one hundred and two, including all the officers of the vessel, and all the women and children. The news created a profound sensation throughout the colony and wide-spread grief, for bereavement was carried into

many domestic circles. The flags were half-masted in the city and at Port Adelaide; feeling references were made to the calamity at the Supreme Court and in churches; subscriptions were raised for those of the bereaved who were in want of aid through the loss of their protectors and breadwinners, and, when Parliament met, allowances were voted to the families of the Judge and Mr. Whitby.

The vacancy on the Judicial Bench was filled by the appointment of Mr. Randolph Isham Stow, Q.C., who for fourteen years had been the acknowledged leader of the bar, and had also won reputation as a Minister of the Crown and a Parliamentary debater. About fourteen months later Sir Richard Hanson died suddenly from affection of the heart, and Mr. Samuel J. Way, Q.C., who had led the bar since Mr. Stow's elevation, was appointed Chief Justice.

When the new Assembly met in 1875, no time was lost in turning the Ministry out, Mr. Boucaut moving the motion of no-confidence, and thus formally securing the position, already accorded to him by the majority, of leader of his party and former of the next Ministry. An Act was passed in 1872 increasing the number of members by ten, and this session of 1875 was the first in which forty-six members sat. The change has been most beneficial in promoting the stability of Governments. With only thirty-six members, a crisis was almost always imminent, and the tactics, ability, and caution of Ministers were constantly strained to the uttermost in the effort to retain their hold of the Treasury benches. This was a sad hindrance to useful legislation; but the addition of ten members made a wonderful change for the better. The Boucaut Government formed in 1875 would have lasted for three years, but for the breach in its ranks by the appointment of Mr. Way to the Chief Justiceship. The same may be said of the next Boucaut Cabinet, and as a matter of fact substantially the same Ministry, with the same policy, held office for more than three years. Though the Premier in 1878 was made a Judge, the Chief Secretary, Mr. (now Sir William) Morgan, reformed the Cabinet, with no change of policy, simply taking in another member in place of Mr. Boucaut. The Bray Ministry is now in its third session. Perhaps Ministerial crises will be more frequent again for the next few years, but if so, the reason will be found in acute differences of opinion respecting taxation, not in an overmastering propensity to change.

In the session of 1875, Mr. Boucaut's policy was to borrow about £3,000,000 for public works, and impose stamp duties and probate and succession duties, the amount he expected from the new taxes being about £60,000. He did not think it right to incur the liability of fresh payments of interest on loans without making some provision for revenue to meet the additional expenditure. This taxation was called by himself the keystone of his policy. The proposed taxes were sanctioned by the Assembly, and rejected by the Legislative Council. After a recess of five weeks, the Parliament was convened for a second session, when the taxation Bill was again passed by the Lower House and thrown out by the Upper Chamber. Mr. Boucaut then refused to submit his railway and other public works Bills, and Parliament was prorogued.

The first session of 1875 had not been completely barren. The most important measure was the Education Act, which placed the system of State education upon a sounder basis than it had previously occupied. This was the first legislation on the subject since 1851, and the Act of that year had become quite inadequate to the requirements of the times. The new Act abolished the old Board of Education, and provided a Council and a Chief Inspector, who was to be chairman of that body. New life was at once infused into the State schools of the colony. Inefficient teachers were got rid of; the standard of education was raised; the inspection of schools improved; and method and greater accuracy enforced with regard to returns and discipline. Since then model schools have been established; several hundred thousand pounds have been expended in new school-houses; a Training School and a Girls' Advanced School have been founded; and provisions have been made, by scholarships and in other ways, to encourage talented and deserving scholars of all classes of society to acquire the higher branches of education. The authors of the new system were determined, they said, to lay open an educational road, even from the gutter to the University. The Council of Education was abolished in 1878 and the control and administration of the department was vested in the Minister of Education, to whom the Chief Inspector is directly responsible.

During the recess of 1875-6 Sir Richard Hanson's death occurred, and when the Attorney-General, Mr. Way, was ap-

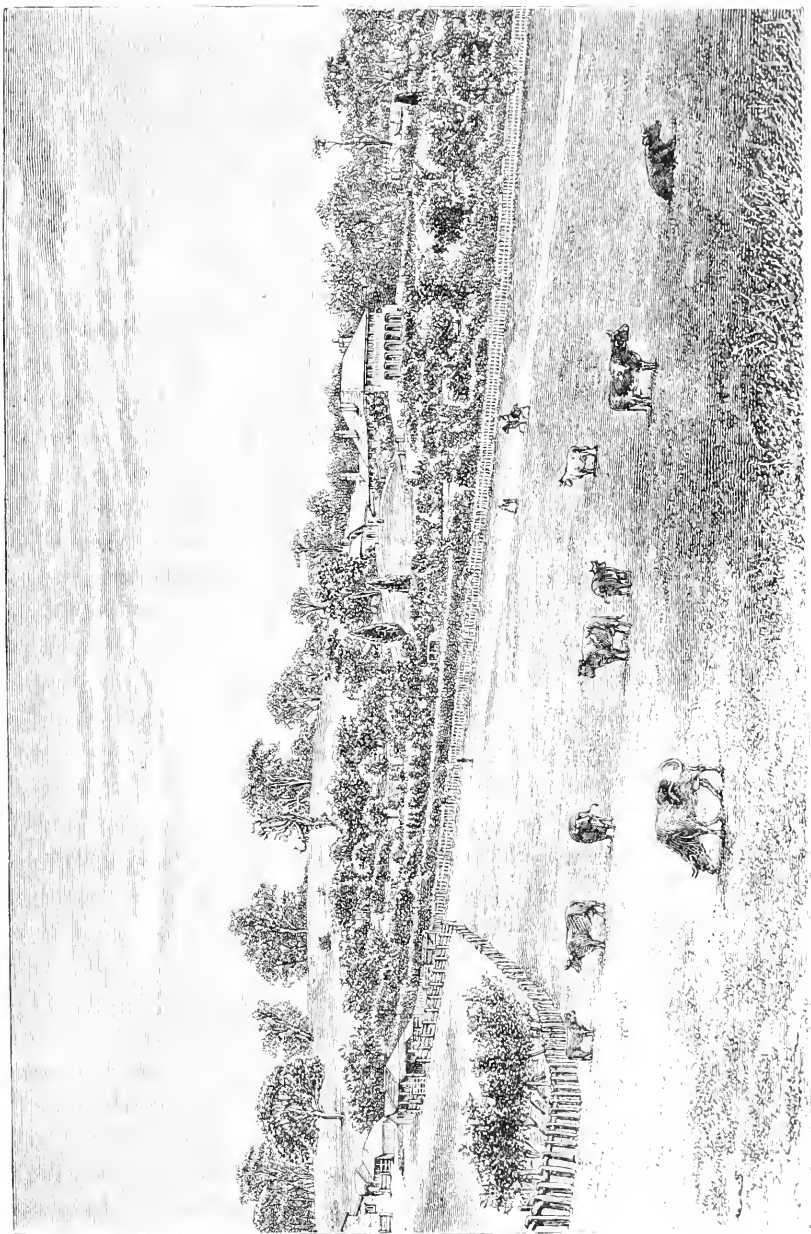
pointed to succeed him as Chief Justice, some difficulties arose in the Cabinet. One Minister wished to retire; one or two others desired a further change of colleagues; and Mr. Boucaut resolved upon a reconstruction. He met Parliament in June, 1876, with new colleagues selected from the Opposition, or at least from outside his party. This move excited great dissatisfaction, and the new Ministry was promptly met with a vote of no-confidence, on the motion of Mr. Colton, who formed a Cabinet constituted of members both of the Opposition and the Boucaut party, the former being represented in the new Cabinet by Sir Henry Ayers, who in the Legislative Council had been the foremost opponent of the Boucaut Ministry during the previous session. The new Ministry abandoned the stamp tax, but carried the probate and succession duties, from which the receipts have been small, not averaging £11,000 per annum since their first imposition.

During this session Parliament sanctioned the loan of nearly £3,000,000 for public works, and Bills for the following railways were passed:—Narrow gauge (3ft. 6in.)—Port Augusta to Government Gums, 199 miles; Gladstone to Jamestown, twenty miles; Rivoli Bay to Mt. Gambier, fifty-seven miles; Kadina to Barunga Gap, thirty-three miles. Broad gauge, 5ft. 3in.—Kapunda to North-West Bend of the Murray, fifty-six miles; Burra to Hallett, eighteen miles. I have omitted fractions of miles, and the total length of the lines authorised in that year was about 380 miles. In the same session, the first Private Tramway Bill was passed. It authorised the construction of a line from King William-street, about the centre of Adelaide, to Kensington and Norwood, the total length being about three miles. Now there are city and suburban tramways going from Adelaide termini in all directions, east, west, north, and south. They are an immense source of convenience to the public, and some of them are very profitable investments. Soon after Governor Musgrave's arrival he took part in the opening of a private railway connecting Adelaide with Glenelg, the chief watering place of the colony, on the shores of Holdfast Bay. The length of the line is about six miles. Several years afterwards a rival line was opened, taking a different route; but the two concerns have been amalgamated.

In the same year there was a new tariff, but no radical changes were effected in our fiscal system. The highest *ad valorem* duty

was kept at its old rate of 10 per cent., and there has been no change since in the *ad valorem* duties, and only small alterations in any other part of the tariff. The criminal law was consolidated and amended, and the same service was performed for District Councils. An Act was passed to authorise a Border Duties Convention with New South Wales ; and other useful measures became law in this memorable session.

Sir Anthony Musgrave left the colony in January, 1877. It had advanced under his rule, and he remained long enough to see South Australia started on a career of more rapid progress. When Sir James Fergusson left the colony, there were 133 miles of railway open ; at the end of 1873, the total length had increased to nearly 200 miles. When Sir Anthony Musgrave's Governorship of South Australia ended, there were 302 miles open for traffic, and the Parliament had sanctioned the construction of 380 miles more. Adelaide had been connected by telegraph with Western Australia by a land line along the coast from Port Lincoln to Eucla, just within the boundary of that colony. The revenue had increased from under £1,000,000 to £1,311,925 (1876-7). The population between the end of 1872 and the close of 1876, had increased from about 200,000 to 237,090 ; land cultivated, from 1,225,073 to 1,828,115 ; staple exports, from £4,285,191 in 1873, to £4,427,727 in 1876 ; cattle, from 174,381 to 219,441 ; horses, from 87,445 to 106,903 ; sheep, from 5,617,419 to 6,133,291.



Lindsay House, Angaston.

CHAPTER IX.

1877 to 1883.

The Chief Justice—Arrival of Sir W. W. Cairns, and his departure on account of ill-health—Arrival of Sir William Jervois—Australian Defences—Quarrel between the Colton Ministry and the Upper House—Colton Ministry defeated on a crisis motion—The second Boucaut Ministry—Crown Lands Act—Death of Mr. Justice Stow—Mr. Boucaut, the Premier, appointed Judge—Mr. Justice Gwynne retired several years later and was succeeded by the Crown Solicitor, Mr. Andrews—The Morgan Ministry—The Volunteers—The Forts—War Vessel—Morgan's retirement—The Bray Ministry—Upper House Reform—Railway Construction—The Nairne Line—The Jubilee Exhibition—The Transcontinental Line—Other Railways—Rise in Value of Property—Progress—Arrival of Sir William Robinson.

THE Hon. S. J. Way, Chief Justice, administered the Government for two months after Sir Anthony Musgrave's departure, till the arrival of Sir William Wellington Cairns, K.C.M.G., on the 24th March, 1877, from Queensland, over which flourishing province he had been Governor for several years. His Excellency was suffering from ill-health, and before he had been in South Australia two months had resigned his position and was on his way to England. At this time, while there were wars and rumors of wars, the defences of the Australian colonies were occupying the serious attention alike of the colonists and the Home Government, and Sir William Jervois, one of the most eminent military engineers of the day, was employed with Colonel Scratchley to examine the coast and inquire generally concerning the means of defence in Australia, and report upon the best methods to be taken for fortifying the principal harbors, and in other ways putting the Australian provinces in a position to resist invasion. At such a period the announcement that His Excellency had been appointed Governor of South Australia was received with satisfaction, not only by the people of that colony, but by Australians generally. Sir William Jervois' gubernatorial experience had been confined

to a Crown colony, but his shrewdness and tact enabled him readily to adapt himself to the peculiar constitutional duties of a ruler over a people enjoying the advantages of responsible government. He did not arrive till the 2nd October, 1877, the Government having been again administered by the Chief Justice during the second interregnum in that year. Sir William found the Parliament in a disorganised condition. The Colton Ministry had got into trouble with the Upper House on a question of privilege relating to the erection of new Parliamentary Buildings, and had not succeeded in making peace with the members of that Chamber, who, in their displeasure, went to the length of deposing the Chief Secretary, Sir Henry Ayers, from his position as leader of the House, and taking the conduct of the Government business from him and handing it over to Mr. William Morgan. The Opposition in the Assembly grew stronger, till, at last, about three weeks after Sir William Jervois' arrival, a motion of want of confidence in the Ministry was carried by the casting-vote of the Speaker, the late Sir George Kingston, who, though favorably disposed towards the Government, acted on the principle that no Ministry should hold office simply at the will of the Speaker. Mr. Boucaut, who was requested to form a Cabinet, selected his colleagues, and returned to office. It was reasonably supposed that a Ministry formed under such circumstances would not last long, but this one—or what was substantially the same Ministry, with a change of Premier—retained office for about three years and a half.

The great measure of the year 1877 was the Crown Lands Consolidation Act, which repealed all the statutes, thirty-one in number, relating to the Crown Lands in South Australia proper, the Northern Territory not being dealt with in this Act; made material alterations in the mode of disposing of land to agricultural selectors, and established some fresh provisions concerning pastoral and mineral leases. It re-established purchase of agricultural lands in the first instance by auction, which was limited to agricultural selectors on credit, and they bid for choice of sections. The area of ordinary agricultural lands to be held by one credit selector was fixed at 1,000 acres, reclaimed lands 640 acres, and scrub lands, on lease with right of purchase, at 3,200 acres. The conditions on which mineral lands were leased were also made much

more favorable to the lessees, and to the proper development of the mineral wealth of the country. In 1878 the Act was altered in some of its minor details, and some fresh advantages were given to the pastoral lessees with respect to rent and improvements. In 1879 another amending Act was passed abolishing bidding for choice, and providing that the bidding should be for each block as it was named by the Government Auctioneer. Since then the terms of purchase have been greatly liberalised. The period over which the payments of purchase-money were to be spread was extended in 1880 from nine to twenty years. In 1881 there were some further amendments in favor of the agricultural selectors, and last year the most sweeping changes were made. Agricultural selectors who had suffered from bad harvests were granted remission of one to three years' interest. All who were dissatisfied with their purchase might surrender and re-purchase at auction, at an upset price, which, in case of failure, to sell the Government would reduce till it came to 20s. The consequence has been that hundreds of farmers who had covenanted to give from £2 to £7 per acre, and even more, for their land, have got it for 20s. 6d. A stranger purchasing would have to pay in cash to the outgoing selector three-fourths of the value of the improvements, as decided by official valuation; but in rare cases did the land pass into any other hands than those of the original selector. Anyone else intending to buy was at a great disadvantage. The former holder had everything to gain and nothing to lose. Three-fourths of the valuation of his improvements represented more than the amount of money he had spent upon them, and if he ran the land up at auction to the price he had agreed to give for it, he would, if it were knocked down to him, be no worse off than if he had not surrendered. Interest payments were also abolished, so that every payment is counted as purchase-money.

I have in these chapters briefly sketched the history of our land legislation without going too much into tedious details, but in future chapters will explain the land system as it affects the several leading interests of the colony separately. In the chapter devoted to agriculture and horticulture, the land laws only as affecting those interests will be expounded; and mining, and the pastoral industry, severally, will be treated in the same way. The Northern Territory and its land system will occupy a separate chapter. It may

be observed that there are two great principles governing the land system throughout, one being that the squatter should retire as the plough advances, and the other that the freehold of mineral lands should not be parted with by the Crown.

In 1878, Mr. Justice Stow died at the age of forty-nine. The Premier in the Assembly, and the Chief Secretary in the Upper House, in announcing the event, expressed their high respect for the deceased gentleman in his judicial capacity, and previously as a member of the Legislature and a Minister of the Crown. Other members of both Houses spoke in the same strain. The remains of the late Judge were accorded a state funeral, which was attended by an immense concourse of people. The Premier, Mr. Boucaut, was appointed to the vacant Judgeship. Mr. Morgan, the Chief Secretary, succeeded Mr. Boucaut as Premier; all the other colleagues and Mr. Neville Blyth joined him in forming a Cabinet. Mr. Blyth, some months afterwards, resigned on account of ill-health, and was succeeded by Mr. Rees, who gave way to Mr. T. King, who, wishing to visit England, retired, and his place was taken by Mr. Basedow.

Sir William Jervois laid the foundation stone of the University buildings, and remained to declare them open for the purposes for which they were intended. The present structure is only part of the design, which, when carried out, will present an imposing appearance. The University of Adelaide was founded through the munificence of Sir Walter Watson Hughes, who offered £20,000 as an endowment for the institution. In 1874, an Act was passed by the Legislature to give effect to the scheme, and subsequently Sir Thomas Elder endowed the University with £20,000. Parliament voted liberal sums towards the building, and set apart public lands to be leased for the benefit of the institution.

In the first year of Sir William's rule, the Rifle Companies Act was passed, and a very creditable force was established. The first volunteer force of South Australia was formed in 1840, during Colonel Gawler's Governorship, and was provided with a brilliant staff of officers. History is silent as to the exact number of the rank and file, and it may be assumed that tradition is not far from correct in representing that there was but one private, who was duly reviewed on high days and national holidays. This little army was spoken of irreverently, and gradually died out, though some of

the officers were known by the rank they acquired in connection therewith to the end of their lives. No further attempt was made to form a colonial army till the time of the Crimean war, when volunteers were enrolled to the number of about two thousand men, including artillery and some excellent companies of cavalry. This force was disbanded about fourteen years ago by a Government of which Mr. Strangways was Premier. As in some other colonies, there has been a great eagerness to provide for military defence during a war scare. The Parliament votes money pretty freely, young men in considerable numbers enlist, and a certain amount of military ardour is displayed; but as the alarm subsides, so does the soldierly spirit, and it is difficult to keep the volunteer force from wasting away. This should, however, be stated in the past tense, for the present condition of the Volunteer Military Force is satisfactory. The force consists of one troop of mounted rifles, two batteries, and twelve companies of infantry, numbering in all 1,300 rank and file, besides a small permanent force. In 1878, Colonel Downes, R.E., arrived to take command, and with him Major Godwin of the 103rd Regiment as Adjutant-General. Under their management the force soon acquired discipline, and might be relied upon to meet any body of men likely to be landed with hostile intent on the shores of South Australia. In the beginning of 1880, Major Godwin returned to England, and was succeeded by Major Fergusson, of the Rifles, brother of Sir James Fergusson, and private secretary of Sir James during his Governorship of South Australia. Major Fergusson, early in the present year, returned to his regiment, and his place is taken by Lieut. Jervois, R.E., son of our late Governor.

As Port Adelaide was, at the time of Sir Wm. Jervois' arrival, wholly at the mercy of any gunboat that might be employed to shell it, the construction of two forts for its protection was a portion of the scheme of defence adopted by the Parliament. One was finished in 1881, and the other is in course of construction, both being built according to the design of Sir William Jervois; Colonel (now Major-General) Scratchley carried out the details of the first fort for some time, and then the superintendence was placed in the hands of Colonel Downes, under whose directions the second fort is being constructed. The first is manned and has its guns in position. They consist of two ten-inch twenty-ton guns

carrying charges of 130lbs. of powder, and two sixty-four pounders. The second fort will be armed with two nine-inch twelve-ton guns and two eighty-pounder rifled guns.

A small war vessel has also been ordered, and will be in South Australian waters before long. It must not be forgotten that besides the volunteers, there are the affiliated rifle companies. There were five rifle companies from the time of the disbandment of the volunteers, about the year 1869, till the new force was formed, when the riflemen, with creditable patriotism, offered their services to the Government as an auxiliary force, stipulating for as much freedom from strict military requirements as was consistent with discipline, effectiveness, and unity of action. Difficulties have arisen as to the relations of the rifles with the Colonel Commandant, but a good understanding has been arrived at upon disputed points; and the rifles might be relied upon to render valuable service to their country in the hour of need. This force numbers about 800.

In 1881, the Premier, Mr. Morgan, resigned on the score of ill-health. Previously, in the same year, on the elevation of Mr. Andrews, the Crown Solicitor, to the Judgeship, vacant by the retirement of Mr. Justice Gwynne, Mr. Charles Mann, Q.C., the Treasurer, took the Crown Solicitorship, and the portfolio he relinquished was handed to Mr. G. S. Fowler, a leading merchant and a clear-headed financier and political economist. He speedily broke down under the strain of his new duties, added to his business engagements, and resigned. Mr. W. B. Rounsevell succeeded him. Mr. Bunday, Q.C., resigned the Attorney-Generalship through illness, and was succeeded by Mr. J. H. Symon, Q.C. The Ministry was now disorganised by all these retirements and appointments, and at last Mr. Morgan resigned. Mr. George C. Hawker, the Commissioner of Public Works, endeavored to construct a Cabinet but gave up the task. Mr. Colton was asked to form a Ministry but declined, and the task was undertaken by Mr. J. C. Bray, who, with the colleagues he then chose, has held office ever since.

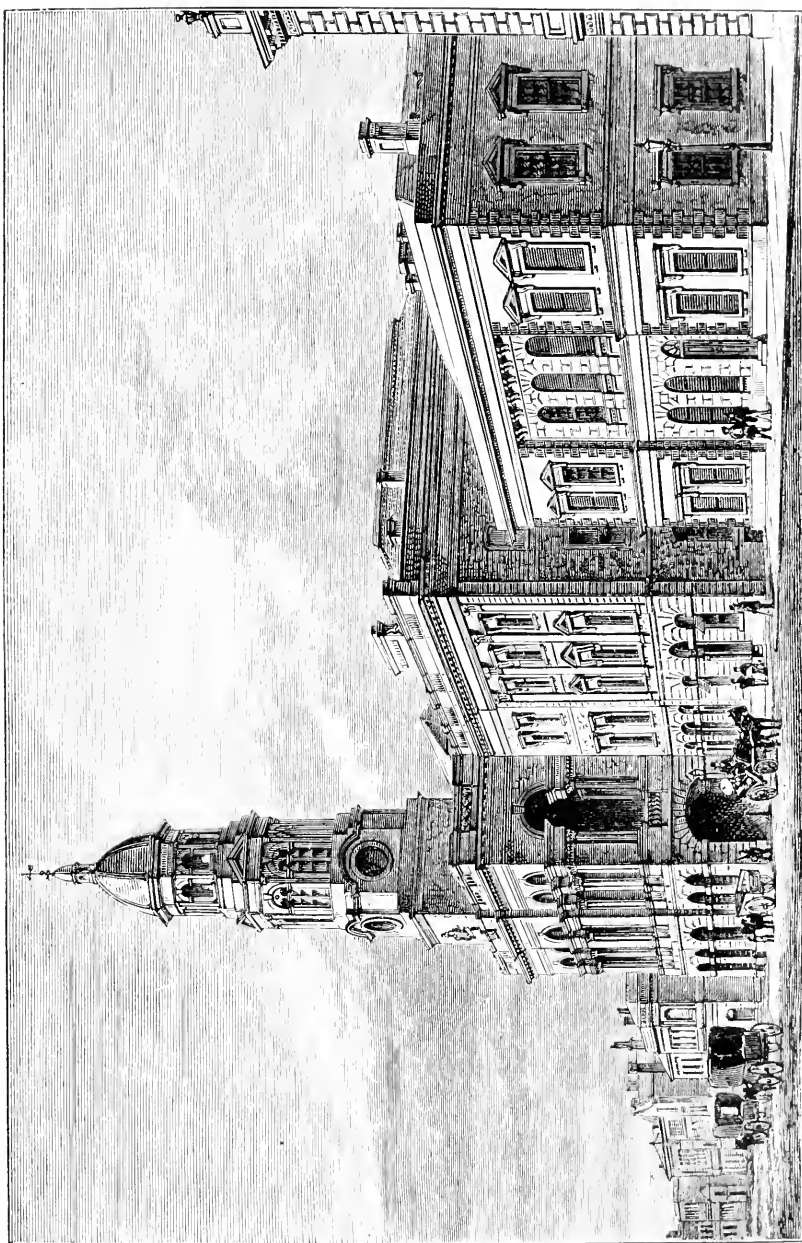
The great question of reform of the Upper House, that had agitated the colony for many years, was set at rest in 1881. That chamber was held to be obstructive. Whether it was so or not can be decided by the simple fact that, excepting the Probate and Succession Duties Bill, it had thrown out, in different years, commencing with 1875, every measure submitted to it for taxing pro-

perty. It was felt that this state of things must be remedied by making the Legislative Council, in some measure, amenable to public opinion. To its credit, it may be said, the Council reformed itself, for in the year mentioned it passed a Bill increasing the number of members from eighteen to twenty-four, reducing the period between the retirement of one-third of the members from four to three years; dividing the colony into four districts for the election of Legislative Councillors, and providing that in case of any Bill being rejected by the Legislative Council, or amended so as to cause its failure to become law, after having been passed in the Assembly by absolute majorities during two consecutive Parliaments, it shall be lawful for the Governor either to dissolve both Houses or issue writs for the election of one or two members for each of the Legislative Council Districts. This Bill, it is believed, will afford ample security against deadlocks or Upper House obstructiveness.

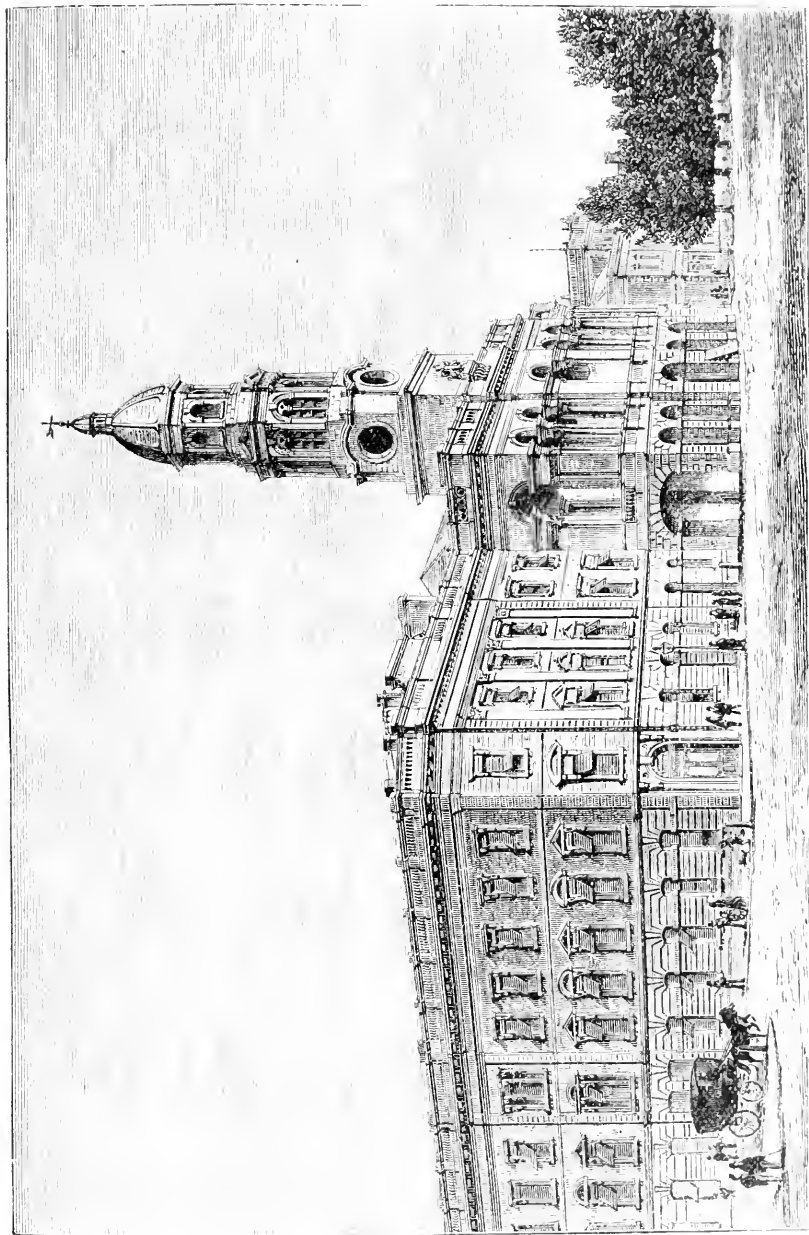
The work of railway construction was carried on with great vigor during Sir William Jervois' rule. Early in 1878, at Port Augusta, he turned the first sod of the railway to be constructed from that terminus for 200 miles northwards to a place known as Government Gums, but now generally spoken of as Farina, the name of a township formed there. Before he left South Australia Sir William took the leading part in the opening of this railway, and when his connection with the colony ceased a short extension northwards of thirty odd miles to Hergott Springs was in progress. Between 1877 and 1883 the railway in the South-East, connecting Rivoli Bay with Mount Gambier, about fifty miles in length, was opened; a south-eastern line about the same length from Lacepede Bay to Naracoorte having been completed the year before Sir William's arrival. The railways connecting Wallaroo district and its mines and township and port with Port Wakefield were, by a short branch, linked on to the railway system uniting Adelaide to the north country; several smaller lines were also completed. When Sir William Jervois arrived, the longest line of railway was about 120 miles; when he left, there was an iron road from Adelaide to Farina, a distance of 400 miles. The total length of the lines open for traffic increased from 302 miles, in the beginning of 1877, to nearly 1,000 miles in January, 1883. But the greatest achievement in railway enterprise, since the establishment of the

colony, will be the construction of a line from Adelaide to the Victorian border. This will connect the South Australian capital with the three wealthy colonies of Victoria, New South Wales, and Queensland, with their population of over two millions. An Act to authorise this great work was passed in the session of 1882. The most difficult part of the line is that from Adelaide to Nairne, already constructed by authority of an Act passed in 1874. The remaining distance can be made very rapidly, as there is either water or railway connection with four points that may serve as the starting-points of different sections of the work. It is intended to have this line completed in time for the Jubilee Exhibition, to be held in Adelaide in the year 1887; and there can be no difficulty in accomplishing the task before that year. Before this book is published the Parliament will have dealt with Bills for branches from the Great Northern line of railway to the New South Wales and Queensland borders; for an extension of that grand trunk line from Hergott Springs, about 200 miles northward to Primrose Springs; and for a line coming southward from Port Darwin to Pine Creek, a well known auriferous locality; and it is the settled intention of the Government, the Parliament, and the country, to bridge over with the iron road the space between Pine Creek and the present northern terminus of the Port Augusta line, so connecting by rail the Southern with the Indian Ocean.

The effect of the Boucaut policy was marvellously displayed during Sir William Jervois' rule in the increase of population and trade, and the enormous rise in the value of property. During the six years following 1876, population increased from 237,090 to about 300,000; land under cultivation, notwithstanding bad seasons and consequent distress among the farmers in the north, had increased from 1,514,916 to 2,623,195 acres; the revenue increased from £1,331,925 for the year 1876-7, to £2,242,085 for the year 1881-2. The value of business sites in Adelaide rose 120 per cent., and of good residence sites 100 per cent. Street property in Adelaide, not worth £200 per foot in 1876, was worth £400 at the end of 1882. A similar rise took place in suburban and seaside property. A wild land speculation was in full flood in 1882; numerous townships were laid out all over the Adelaide plains and in the hills, and there was a perfect mania for land syndicates and speculation in real property in all directions within ten or fifteen



Town Hall, Adelaide.



Eagle-chambers and Town Hall, Adelaide.

miles of Adelaide. Of course a severe reaction or stagnation followed, but this does not affect the value of city and good seaside or other good suburban property. Since the briskness in land transactions was over, a street frontage in Adelaide has been sold at £300 per foot, and other frontages are valued at £100 per foot above that figure.

Sir William Jervois left the colony in January of 1883, and the Chief Justice was sworn in as Administrator of the Government during the brief period before the arrival of Sir William Robinson, in the following month, from Western Australia, over the affairs of which colony he had presided for several years. He met with a cordial reception and is apparently fortunate in the time of his promotion, for everything points to the probability of a very prosperous year in 1884. The winter has been very favorable, copious rains having fallen, and both squatters and farmers confidently expect a rich reward for their labor and outlay.

CHAPTER X.

The Constitution—Administration of Justice—The Press.

ALTHOUGH in previous chapters the various changes in the form of government since the foundation of the colony have been recorded, and their nature briefly indicated, it will perhaps be well to describe a little more fully the system of Responsible Government as it exists in South Australia. Without very much discussion the colonists, nearly thirty years ago, resolved upon the adoption of the bi-cameral system, though there were not wanting advocates of only one Chamber. A Ministry responsible to the Parliament was insisted upon, and granted by the Imperial Legislature. The Governor of course acts on the advice of his Ministers, except in those special cases pointed out in his instructions, in which he is not to follow that advice, and other cases in which he is to act on his own discretion. It is discretionary with the Governor whether he will exercise the prerogative of mercy in criminal cases, whatever the Ministerial advice may be; but it is rarely that a Governor in a colony under Responsible Government rejects that advice. A request from the Ministry for a dissolution is considered by a Governor according to the circumstances in which the request is made, the state of the public business, the condition of parties in Parliament—especially in the Lower House—and the desirability of having the voice of the country upon important questions under discussion. Sometimes the decision of a Governor in South Australia with respect to a general dissolution has given dissatisfaction, and invariably the dissolution has proved fatal to the Ministry at whose request it was granted; but since the establishment of Responsible Government no Governor of South Australia has ever brought himself into serious trouble through disagreement with his Ministers or with either branch of the Legislature, or in any other way through the manner in which he has seen fit to exercise his constitutional functions.

Some Acts of the Colonial Legislature he must not assent to, but must reserve them for the Queen's assent. These include all which alter the Constitution, or interfere in any way with the national currency, or affect trade beyond the limits of the colony, or are opposed to Imperial legislation specially applied to colonies, or to laws understood to prevail over the whole of the British Empire. The Bullion Act of 1852 was opposed to British law and the express instructions of the Governor. Now a Governor would be as clearly going beyond his duty in assenting to such a measure as Sir Henry Young was; but he acted in an extraordinary emergency, with great benefit to the colony, and the irregularity was condoned. The South Australian Marine Board Act of 1881, affecting as it did British trade and shipping, was reserved for Her Majesty's assent. The Act legalizing marriages with a deceased wife's sister was also reserved. Acts not requiring to be reserved are assented to by the Governor in Her Majesty's name and left to their operation, and should Her Majesty not disapprove—as the Queen rarely or never does in such cases—an announcement in due course appears in the *Government Gazette* of the colony to the effect that the Imperial power of disallowance has not been exercised.

With the exceptions we have indicated, the relation of the Governor to the Legislature and the Cabinet is precisely that of Her Majesty to Her Ministry and Parliament. The Governor's influence on political affairs depends upon his personal character, ability, and the carefulness with which he avoids obtruding his wishes and opinions so as to suggest the idea of interference in matters the people consider they have committed to their representatives. The Governor has opportunities of doing much good by his active sympathy with institutions of a religious, benevolent, and educational character, and with all movements aiming at the moral, material, and intellectual advancement of the community. Socially, his personal example is of no small importance. However republican Australians may be in their sentiments, they are very well satisfied with the system of Governors appointed by the Crown, and very few wish for the privilege of electing their chief rulers. The Governor is the one apparent connecting tie with the old country, and receives their sincere, frequent, and enthusiastic welcomes and toasts as proofs generally of regard for himself, but always and in greater degree as manifestations of their loyalty

to our Gracious Sovereign and their attachment to the glorious empire of which they form a part.

The Legislative Council is commonly spoken of as the Upper House, as it is supposed to answer the same purposes as the House of Lords in the old country. The framers of the Constitution, nearly thirty years ago, sought to secure the stability of the Upper House by a property qualification for its electors, a longer tenure of their seats by its members, freedom from arbitrary dissolution by the Governor (which really means the Ministry), and by the whole colony voting as one district, instead of having the members returned like those of the Assembly by separate constituencies. The one-district system grew more and more cumbrous and unsatisfactory as time went on. The idea was to keep the Councillors free from merely local influences; it was thought that being elected by the whole community, they would take broader views of things and be exempt from fear of jeopardising their position by offending the people of a particular district. The theory was good, but could not conveniently be carried out in practice. Representation is generally supposed to imply some amount of intercourse between the representatives and the represented—at least some knowledge of each other and some interchange of views; but this is impossible where the district represented has an area of 400,000 square miles.

The absolute freedom from dissolution and the length of time for which Legislative Councillors held their seats—twelve years, a third retiring and their places filled by a general election every four years—rendered the Upper House irresponsible; and it was necessary to make it somewhat more amenable to public opinion. Hence the Council Reform Bill of 1881, which shortened the tenure of Councillors' seats, divided the colony into four Upper House districts, increased the number of members from eighteen to twenty-four, and provided a means of avoiding deadlocks. In other respects the constitution of the Legislative Council was unaltered.

The qualification of an elector is either freehold of the clear value of £50; registered leasehold of £20, with three years to run or right of purchase; or, occupying dwelling-house of clear annual value of £25; and he must have been registered as an elector six months before he can vote. No property qualification is required

of a member of the Upper House. He must be thirty years of age, a natural born or naturalised subject of Her Majesty, and must have resided in the colony for three years in the case of a natural-born, and five years in the case of a naturalised British subject. In all future general elections of one-third of the total number of members, two will be elected for each of the four districts into which the colony is divided, and the elections to fill casual vacancies will of course be by districts instead of under the old one-district system. The members will be elected for nine years, but as only a third are returned at one time, the country chooses that proportion of the Legislative Councillors every three years. For some years the Upper House will be in a transition state, part of the members holding their seats as representatives of the whole colony, and the rest as representatives of districts; but at the end of twelve years at farthest, all will have been returned under the new system. The transition will probably be hastened by occasional vacancies, and in those cases it is to be decided by lot in which of the four districts the election shall be held to fill the vacant seat.

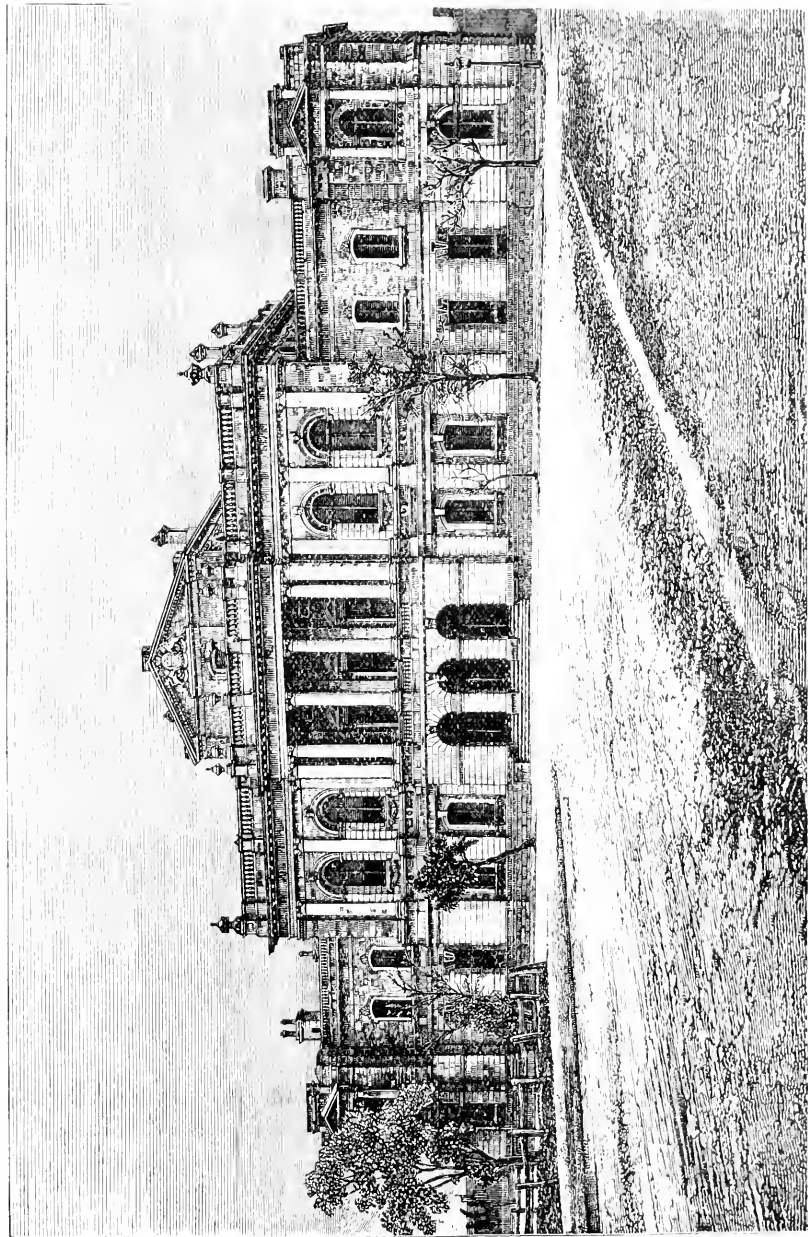
The 16th clause of the Act of 1881 which provides for a dissolution of the Upper House is as follows:—"Whenever any Bill
" for any Act shall have been passed by the House of Assembly
" during any session of Parliament, and the same Bill, or a similar
" Bill with substantially the same objects, and having the same title,
" shall have been passed by the House of Assembly during the next
" ensuing Parliament, a general election of the House of Assembly
" having taken place between such two Parliaments, the second
" and third readings of such Bill having been passed in the second
" instance by an absolute majority of the whole number of mem-
" bers of the said House of Assembly, and both such Bills shall
" have been rejected by or fail to become law in consequence of
" any amendments made therein by the Legislative Council, it
" shall be lawful for, but not obligatory upon, the Governor of the
" said Province, by proclamation to be published in the *Government*
" *Gazette*, to dissolve the Legislative Council and House of As-
" sembly; and thereupon all the members of both Houses of Par-
" liament shall vacate their seats, and members shall be elected to
" supply the vacancies so created: or for the Governor to issue
" writs for the election of one or not more than two new members

“ for each district of the Legislative Council : Provided always
“ that no vacancy, whether by death, resignation, or any other
“ cause, shall be filled up while the total number of members shall
“ be twenty-four or more.” In the event of the Council being
dissolved, the order of triennial retirement of the new members
will be fixed by lot in the first instance, and afterwards will
date from the day of their election.

It will be seen from these provisions that the Council cannot
be lightly or easily dissolved, and that a simpler mode of appealing
to the Upper House electorates than dissolution is provided.
There is now, it is generally considered, ample provision against
deadlocks between the two Chambers, and it is not likely that any
further alteration in the constitution of the Upper House will even
be agitated for, beyond subdividing the four districts, which are of
an inconvenient size, and will make excessive and exhaustive
demands upon the Upper House candidates in the way of travelling
and platform speaking.

The Assembly is elected upon the basis of manhood suffrage.
Every man being a natural born or naturalised subject of Her
Majesty, twenty-one years of age, six months' registered on the
electoral roll, unattainted and unconvicted of treason, felony, or other
infamous offence, or having received a free pardon or served his
sentence for such offence, can vote in the election of members of the
Assembly. Any person qualified to be an elector of the Assembly
is qualified to be a member; except that if not a natural born
British subject, he must have resided in the colony for five years
before he can take a seat in that Chamber, and that no Judge,
Minister of religion, or Government official, other than a Cabinet
Minister, can be a member of either House. Last year an Act
was passed increasing the number of electoral districts from twenty-
two to twenty-six, and of members from forty-six to fifty-two.
There are now several districts returning three members each, and
one district returning one member; under the new Act, which will
come into full effect at the next general elections, each consti-
tuency will return two members.

The Council is presided over by a President, and the Assembly
by a Speaker, and a clause in the original Constitution Act pro-
vides that the salaries of these officials shall be the same, and that
there shall also be equality between the salaries of subordinate



The Supreme Court

officers of the two Houses. The Lower House has a Chairman of Committees, but in the Council the duties of this office are discharged by the President.

According to the literal wording of the Constitution Act, the powers of the two Chambers are co-ordinate, except that the Council must not initiate Money Bills; but from the first the Assembly has resisted any interference with the money clauses of Money Bills by the Upper House, except by way of rejection of the whole measure, and that Chamber has really, if not formally, yielded this point: and the practice corresponds with that of the Imperial Parliament.

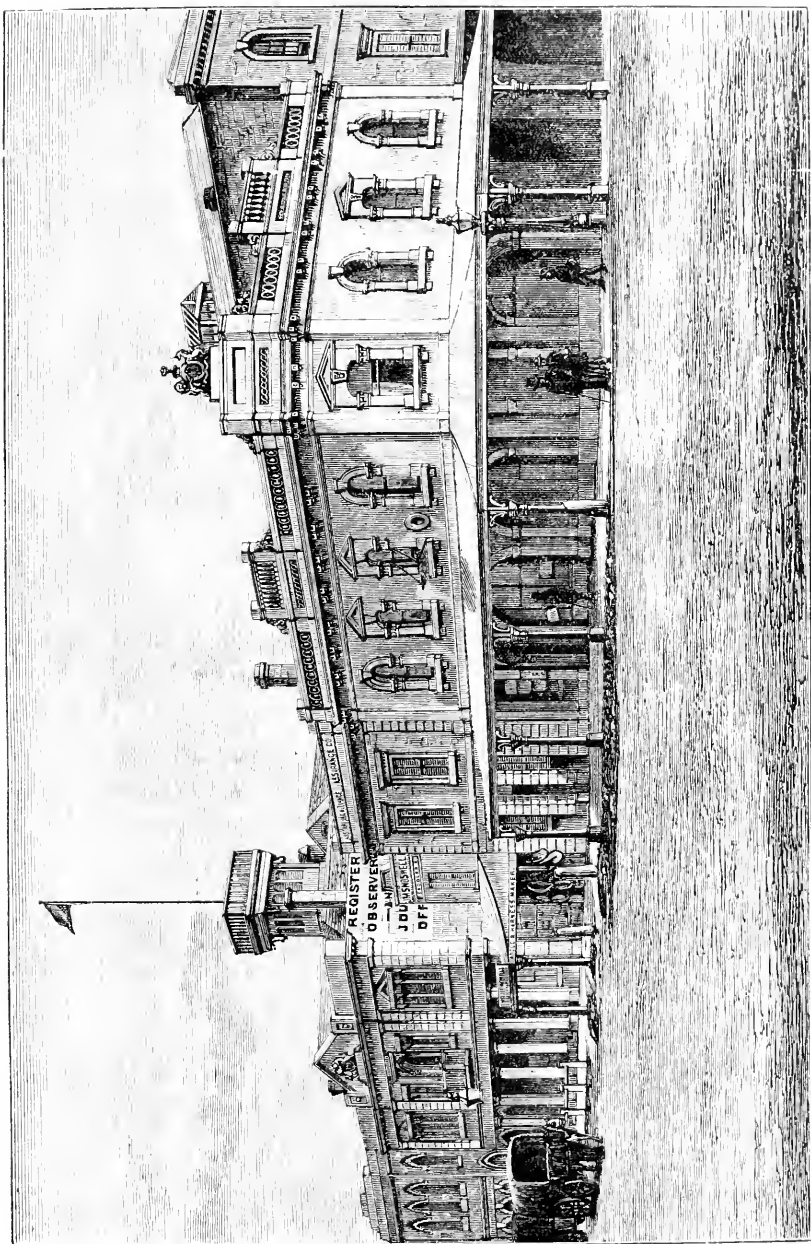
The Ministers of the Crown in South Australia hold office on the same conditions as Her Majesty's Ministers in the old country. They are appointed by the Governor, and their retention of office depends upon their ability to keep a working majority in the Assembly. There are now six Ministers, namely, the Chief Secretary, the Treasurer, Attorney-General, the Commissioner of Public Works, the Commissioner of Crown Lands, and the Minister of Education—who has postal, telegraphic, and Northern Territory affairs in his department. The salaries of the Ministers were fixed by the Constitution Act, and ranged from £800 to £1,300 per annum, but now they are all on a level, at a £1,000. This is provided for in the Civil List, which also includes the salary of the Governor, Judges, Crown Solicitor, Under Secretary, and Commissioners of Audit—the office of Auditor-General, originally provided for, having recently been abolished.

The Judges hold office during good behaviour, and cannot, except for misconduct, be removed without addresses to Her Majesty from both Houses of the colonial Parliament. There is a Chief Justice and two Puisne Judges, who hold six criminal and as many civil sittings in Adelaide during the year, and circuit courts in the south-east and the northern districts of South Australia proper, at longer intervals. The administration of justice in the Northern Territory is entrusted to the Government Resident, with the exception that he cannot try capital cases. The Chief Justice is Judge of the Court of Vice-Admiralty. An Act framed on the lines of the English Judicature Act was passed several sessions ago. It fused the law and equity branches of jurisdiction, and in various ways simplified proceedings in the Supreme Court.

The Insolvency jurisdiction is administered by a Commissioner, whose powers are very large. He can imprison an insolvent for a stated period, not exceeding three years, for certain offences, and for an unlimited time should he consider the bankrupt is not making a full disclosure of his estate, the release not being obtained till the disclosure is made or the Commissioner is satisfied there is nothing to disclose.

The most popular and generally satisfactory of our institutions connected with the administration of Justice are the Local Courts, which are established all over the colony in convenient places. They number about seventy, presided over by fifteen Stipendiary Magistrates. Adelaide, Port Adelaide, and Port Lincoln, each has a Stipendiary Magistrate to itself; other Stipendiary Magistrates each take a number of Local Courts in Circuit. The Limited Jurisdiction of a Local Court reaches £30; the Full Jurisdiction £400. These Courts answer the purpose of County and Small Debts Courts in the old country, and the processes are even more simple. In Limited Jurisdiction a Stipendiary, or Special Magistrate, who has the same rank without pay, can sit and decide alone, or two Justices of the Peace may try the cases; in Full Jurisdiction there must be a Special or Stipendiary Magistrate and two other Magistrates, or, if a Jury is demanded by either suitor, a Stipendiary or Special Magistrate and a Jury of four. There is an appeal on questions of law from the Local Courts of Full Jurisdiction to the Supreme Court of South Australia, but there is no appeal from the Limited Jurisdiction.

Then there is the ordinary jurisdiction of Magistrates apart from civil cases. One Justice may commit for trial for serious offences, and has the power of fine or imprisonment for short periods for petty misdemeanors. A Special Magistrate or two Justices may deal summarily with certain specified classes of felonies and grave misdemeanors, for which the maximum term of imprisonment does not exceed two years; but they cannot sentence an accused person to a longer term of imprisonment than six months, and cannot order a flogging except in the case of boys under sixteen years of age. In all cases triable by a Special Magistrate, the accused has the option of being tried by a Judge, but it is rarely that this choice is made, as the fear of a heavier sentence than the Magistrates can give operates with the accused. Every Magistrate is a Coroner; but



Grenfell-street—showing the “Register” Newspaper Office.

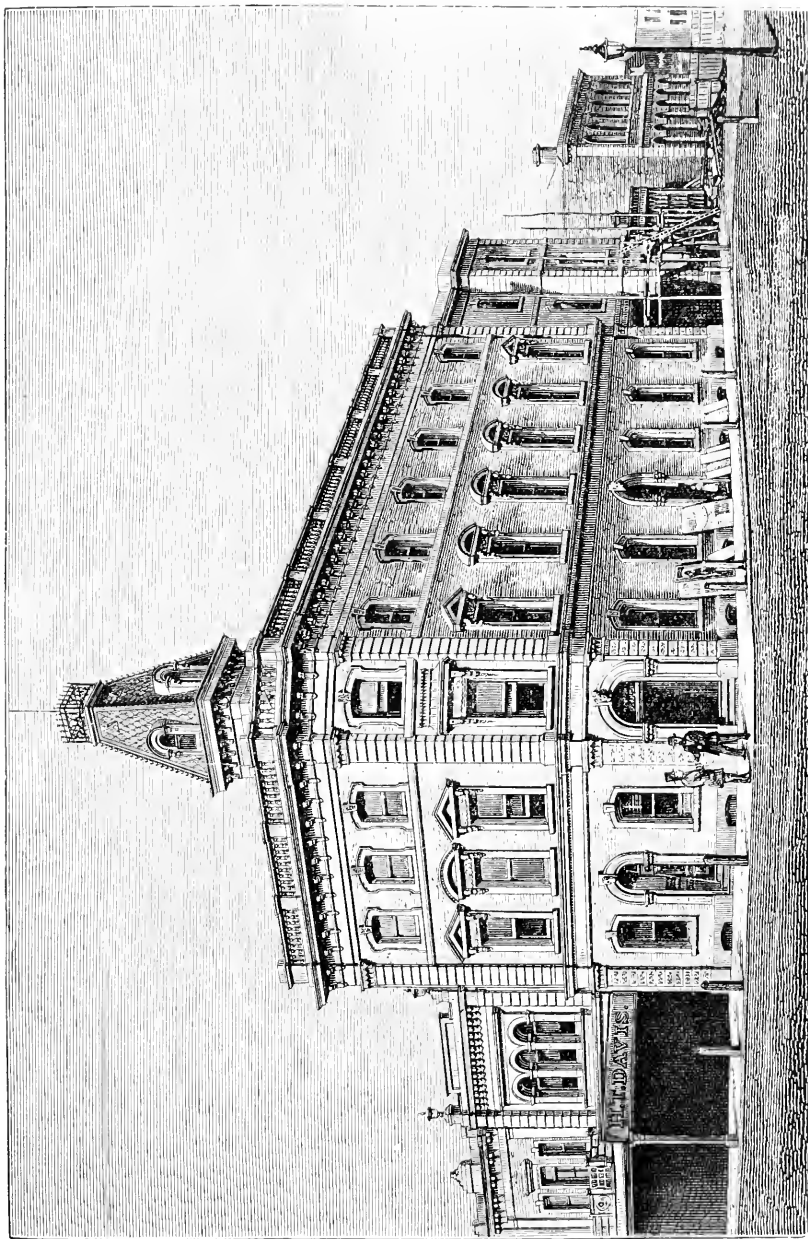
there is a city coroner whose duty it is to hold all inquests in Adelaide, and within a radius of ten miles from the General Post Office.

The new law empowering the Courts to take the sworn evidence of accused persons, and making them liable to cross-examination if they elect to be sworn, has greatly facilitated convictions. In most branches of Justices' jurisdiction there is an appeal to the Adelaide Local Court, which is—not necessarily, but as a rule—presided over by a lawyer. In matters relating to the Customs, Magistrates have great powers, which it is not necessary to specify.

There are Licensing Benches in different parts of the colony, that deal with wine and spirit, publicans', slaughtering, pawn-brokers', and auctioneers' licences. The highest Court of all is what is called the "Local Court of Appeal," which consists of the Governor and Executive Council, except the Attorney-General. The Court is principally, and has at times been entirely, composed of laymen; but it has been the custom of late years to appoint to the Executive Council persons who have filled the office of Acting Governor, and consequently at present the Chief Justice is a member of the Court. This tribunal served a good purpose now and then, perhaps, and prevented some amount of individual hardship years ago when the Supreme Court was in a disorganised state, but it can hardly be expected to command a great amount of respect and confidence among persons who consider that difficult questions of law, concerning which Judges differ, should be remitted to men of eminent legal attainments for their consideration and decision.

The Fourth Estate naturally comes in for notice in this chapter, intimately connected as it is with the other great institutions of the country and with the proper working of the Constitution. Publicity and free discussion are absolutely essential to good government, and these essentials exist in an eminent degree in South Australia. In Adelaide there are two morning and two evening papers, namely, the *Register*, the *Advertiser*, the *Journal*, and the *Express*; published daily. In connection with these are two weekly papers, named respectively the *Observer* and the *Chronicle*. There is one German newspaper the *Australische Zeitung*, published weekly in Adelaide. Besides these there are too

the *Licensed Victuallers' Gazette*, the *Farm and Garden*, three illustrated weekly newspapers, several weekly religious periodicals, one or two temperance journals, and a few smaller periodicals. The country districts own about a score of newspapers, of which one or two are published twice and the remainder once a week. Political matters are discussed with vigor and outspokenness in the public journals, and the tone of the press generally is moderate and decorous, though there are exceptions. The oldest journal in the colony is the *Register*. The first number was published in London on the 18th June, 1836, and the second in Adelaide on the 3rd June, 1837. After the first few months of its existence in the colony it was published once a week; afterwards for some years twice a week; but for the last thirty-five it has been a daily journal. The leading newspapers of Adelaide are conducted with great enterprise, and of themselves afford evidence of the progress of the colony. Many columns are devoted to European, foreign, and intercolonial telegrams and lengthy telegraphic reports of important meetings all over Australia are published.



Weymouth-street—showing the “Advertiser” Newspaper Office

CHAPTER XI.

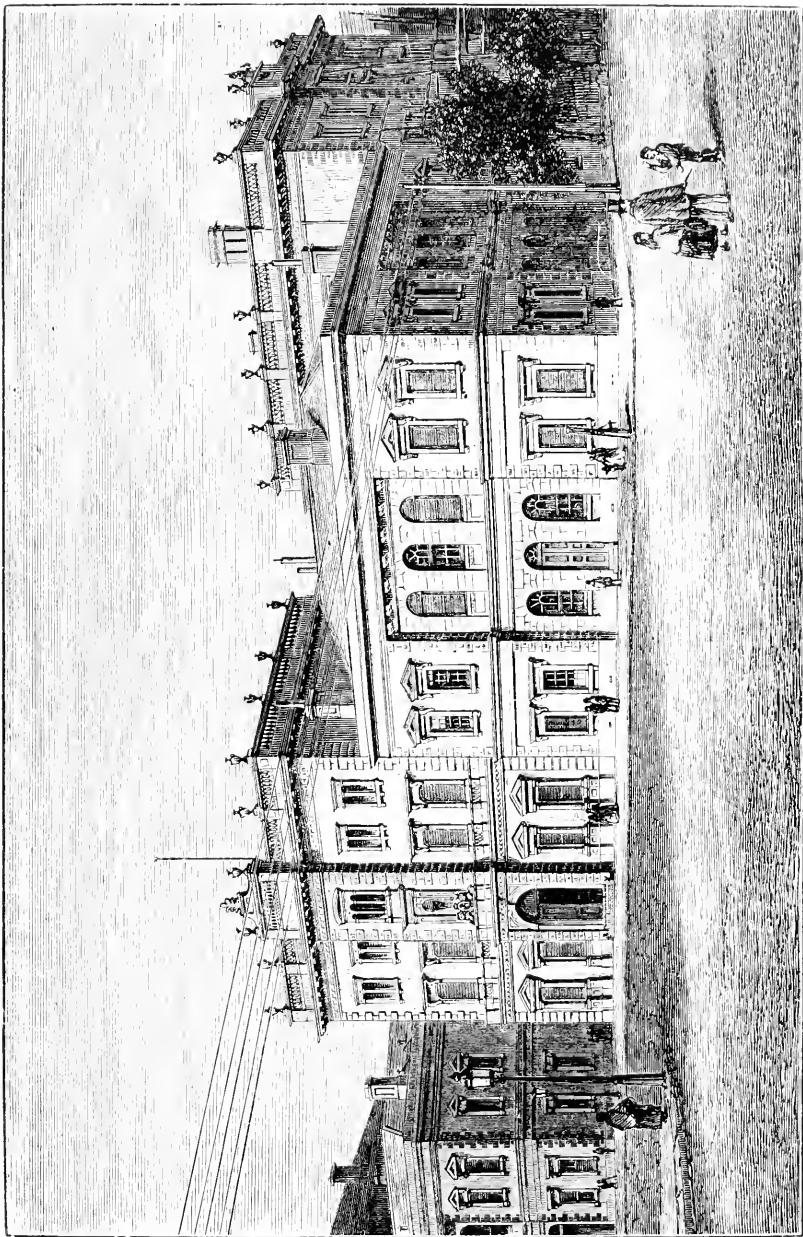
ADELAIDE.

Colonel Light's choice of the site—The Torrens—Wide streets—Post Office—Town Hall—King William-street—Value of frontages—Markets—Terraces—Government Buildings—Park lands—Botanic Gardens—Mount Lofty Range—Suburbs—City Corporation—Assessment—The Dam—Port Adelaide—Towns between the Port and the City—LeFevre's Peninsula—The Semaphore—Largs Bay and jetty—The forts—Glenelg—Henley Beach—The Grange—Brighton—Kensington and Norwood—Unley—Gawler—Kapunda—The Burra—Port Augusta—Port Pirie—Yorke's Peninsula—Its mines and towns—Wallaroo Bay—The hills and towns east of Adelaide—Mount Gambier and the Blue Lake—Port MacDonnell—Beachport and other south-eastern towns and ports—Naracoorte and its famous caves—Bordertown.

THE pioneers of South Australia were very fortunate in their choice of a capital. The site of nearly every other metropolis in Australia is a second choice; but, after nearly fifty years, no one can suggest how Colonel Light's selection of the spot on which Adelaide stands could have been improved. After several months spent in exploring the coast and the country for some miles inland, Colonel Light decided that the principal settlement must be upon the shores of Holdfast Bay. The fine natural harbor formed by what is known as Port Adelaide creek, or river, having been approved, the next consideration was fresh water, and when the river Torrens was discovered, it was at once resolved that the chief city of the new province must be upon its banks. Some little elevation, in order to admit of drainage, was needed, and to secure this advantage it was necessary to go six or seven miles inland. Here upon some rising ground, mostly of limestone formation, Colonel Light laid out the city on both sides of the river.

The streets, most which are wide and some of remarkable breadth, run east and west, and north and south. The business part of the metropolis is on the south side of the river; North Adelaide is more like a fashionable suburb, with its grand terraces

commanding splendid views, its handsome villa residences and spacious grounds, its streets of well-built residences of all sizes and grades. There are some good shops and not unimportant business establishments of a wholesale character there ; but South Adelaide is what is meant when colonists speak of the city, where the greater part of all the business of the province is transacted, where the great mercantile firms have their stores, and the Government buildings attract attention from their size, and some of them by their architectural pretensions. Adelaide has been called " the city " of churches." In North Adelaide the most notable ecclesiastical edifices, considered architecturally or on account of their spaciousness, are the Anglican cathedral and the Congregational church ; in South Adelaide the Catholic cathedral, the Stow Congregational church, the Wesleyan church in Pirie-street, and St. Paul's (Anglican) are the most noticeable to the visitor. There are many others belonging to various sects, and among them several Presbyterian and Methodist churches attract attention from their lofty spires. King William-street, running north and south, from North-terrace, through Victoria-square, to South-terrace, bisects South Adelaide. Government buildings occupy most of the space on three sides of the square ; on the west side are offices, principally of lawyers, architects, and other professional men, an hotel, and some private residences. Rundle-street is the principal street for retail business, and in it are some imposing buildings three and four stories high. The eastern portion of Hindley-street is growing in importance, and has some fine shops. In Grenfell and Currie-streets are the establishments of the leading merchants and of lesser lights of the commercial world. All these streets run east and west. In King William-street are all the banks, with one exception, grand rows of buildings, occupied by commercial and professional men, shops of all kinds, the General Post Office, with its tower 190ft. above the pavement and about 290ft. above the sea level ; the Town Hall, with a tower having an elevation of 145ft. above the pavement ; the Treasury buildings, and a number of imposing hotels. It is in this street that land has been valued at £500 a foot frontage, but this appraisement is considered by good judges as £100 too high. A few months ago £300 per foot was obtained for Grenfell-street property. What property is worth in Rundle-street it would be difficult to say, probably somewhere between those two



Government Offices. Adelaide.

figures. As the population and trade of the colony increase the business area of the city must necessarily extend, and professional men, merchants, and prosperous retailers have to establish themselves farther and farther to the south. The object is apparently to keep as near to the central section of King William-street as possible; but, as time goes on, and the coveted positions become scarce and more valuable, necessarily trade is pushed westward and eastward as well as southward.

In the heart of South Adelaide, near Victoria-square, is the city market, where vegetables, fruit, dairy produce and poultry, hay, and wood are sold; but a far busier market is at east-end of the city, at the head of Rundle-street, and extending a long way towards North-terrace. This market is managed by a private company, and distances, in popularity and the amount of business done, its rival the City Market, which was established years later by the Corporation. On the Park Lands, west of the city and near the river, are the Corporation yards, where all the butchers make their purchases of cattle, sheep, and pigs. Still farther west is the slaughter-house, where oxen and calves must be killed, and soon abattoirs will probably be added for the slaughter of sheep, which may now be killed in the city itself.

Special features of South Adelaide are the four terraces, east, west, north, and south. West of King William-street, on North-terrace, are business establishments of different kinds, hotels, Trinity Church—the oldest church in the colony—and some private residences facing Parliament Houses and the railway station; east of King William-street one soft goods warehouse extends from Rundle-street to North-terrace, and farther to the east is Chalmer's church; but with these exceptions, the terrace is occupied by private houses, some of them of imposing dimensions, and the residences of doctors and dentists. So far I have spoken of the south side of the terrace; opposite is all Government property. From the west-end for half a mile, more or less, are the railway premises, then Parliament buildings and grounds fill the space to King William-street. East of that, in the order named, are Government House, the Institute, the Art Gallery, the University, open lands, the Hospital, the Botanic Gardens, and the Lunatic Asylum. Standing back from the Institute and the Art Gallery, are the Destitute Asylum, the Police Troopers' Barracks, and the

Military Staff Office. The other three terraces are almost exclusively taken up by private dwellings, the most costly and stylish structures being on East-terrace.

North and South Adelaide are divided from each other, not merely by the river, but by a great width of Park Lands, some portions of which are open and the rest well planted with a variety of trees indigenous and foreign, deciduous and evergreen. Great attention is paid by the Corporation to conserving and extending the plantations, and very much owing to this it is that Adelaide grows in beauty year by year. The Park Lands not only divide the City, but extend all round it, so securing its salubrity and the enjoyment of the citizens in an eminent degree. There are five squares planted and enclosed in South, and one in North Adelaide.

The Botanic Garden and Park are the delight of the citizens, and secure great admiration from visitors. They have been for many years under the care of Dr. Schomburgk, who combines eminent scientific attainments with an enthusiastic fondness for his work. A portion of the Park has been recently handed over to the Zoological and Acclimatisation Society, and the Gardens they have enclosed are well cared for and contain an interesting and increasing collection of animals. In all these grounds the botanist and zoologist will find much to interest and instruct him in connection with the fauna and flora of many lands, and conspicuously of Australia.

The position of Adelaide can hardly be surpassed. From all parts of it there is a splendid view of the Mount Lofty Range of hills, distant four or five miles, and from many portions of the city the sea, six miles away, is visible. The Park Lands gives free scope for pedestrian exercise and athletic sports of all kinds, and prevent obstruction of the glorious prospect. To the east and south-east, a succession of suburbs with their villas, gardens, vineyards, and cottages, stretch away to the hills.

The city and its neighborhood, extending over fifty miles, are supplied with pure water from two reservoirs situated a short distance from where the Torrens leaves the hills.

The City affairs are managed by a full-blown Corporation, with Mayor, Aldermen, Councillors, and Town Clerk, who bestow great time and trouble upon the work entrusted to them. The city loans have been so wisely applied that the works for which

they were borrowed return a revenue exceeding the interest payable to the bondholders. The streets are all macadamized; many miles of the footpaths are asphalted; the squares are fenced with iron; capacious public baths are erected, where the art of natation is taught and swimming matches are held, and where the invalid or the luxuriously inclined can enjoy warm or Turkish baths. The annual value of the city property is appraised by the Corporation valuer at £485,068, but this is notoriously an under-estimate that suits the ratepayers when the collector calls upon them, but which they ridicule at any other time. The city, exclusive of the park lands, comprise 701 acres in the south and 342 in North Adelaide, and the river within city limits is spanned by three bridges—not including a footbridge over the strongly-constructed dam near the gaol, on the west park lands.

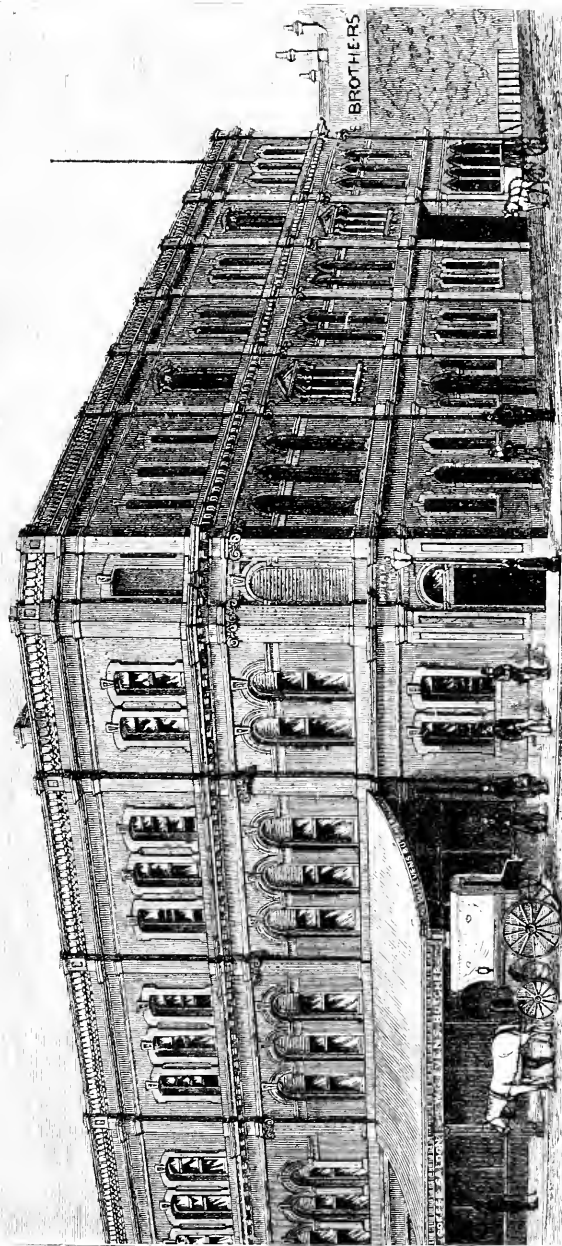
By this dam the river, for about a mile and a half, has been converted from a turgid shallow stream into a fine sheet of water, over which numerous pleasure seekers may be seen on any fine day rowing or sailing in private or hired boats of all sorts, from the little dingey to the racing craft that might meet with the approval of the crack rowers of the old country or the colonies. At one time the Torrens was the grand sewer of Adelaide, but there is now no impure drainage into it. A scheme of deep sewerage, planned by the late Mr. Clarke, the eminent engineer, who designed the drainage system of Calcutta, is in progress, and the main sewer two years ago received all the contributions of all the drains, and up to that time had carried sewage into the Torrens. The sewage of the city is carried about four miles to the north, where a farm has been established for its reception. The population of the city at the time of taking the census of 1881, was 38,479, and it has considerably increased since. In referring to the population of the towns mentioned in this chapter, the returns of the last census will be given.

Port Adelaide, the principal harbor of the colony, is about eight miles from the city. Between them are several towns or townships. A group of these just outside the city's western boundary, on the north side of the river, form the corporation of Hindmarsh. Further west are Woodville, and Alberton, the last station before the port is reached. The town of Port Adelaide is all made ground, reclaimed from the swamp; the population is 3,013.

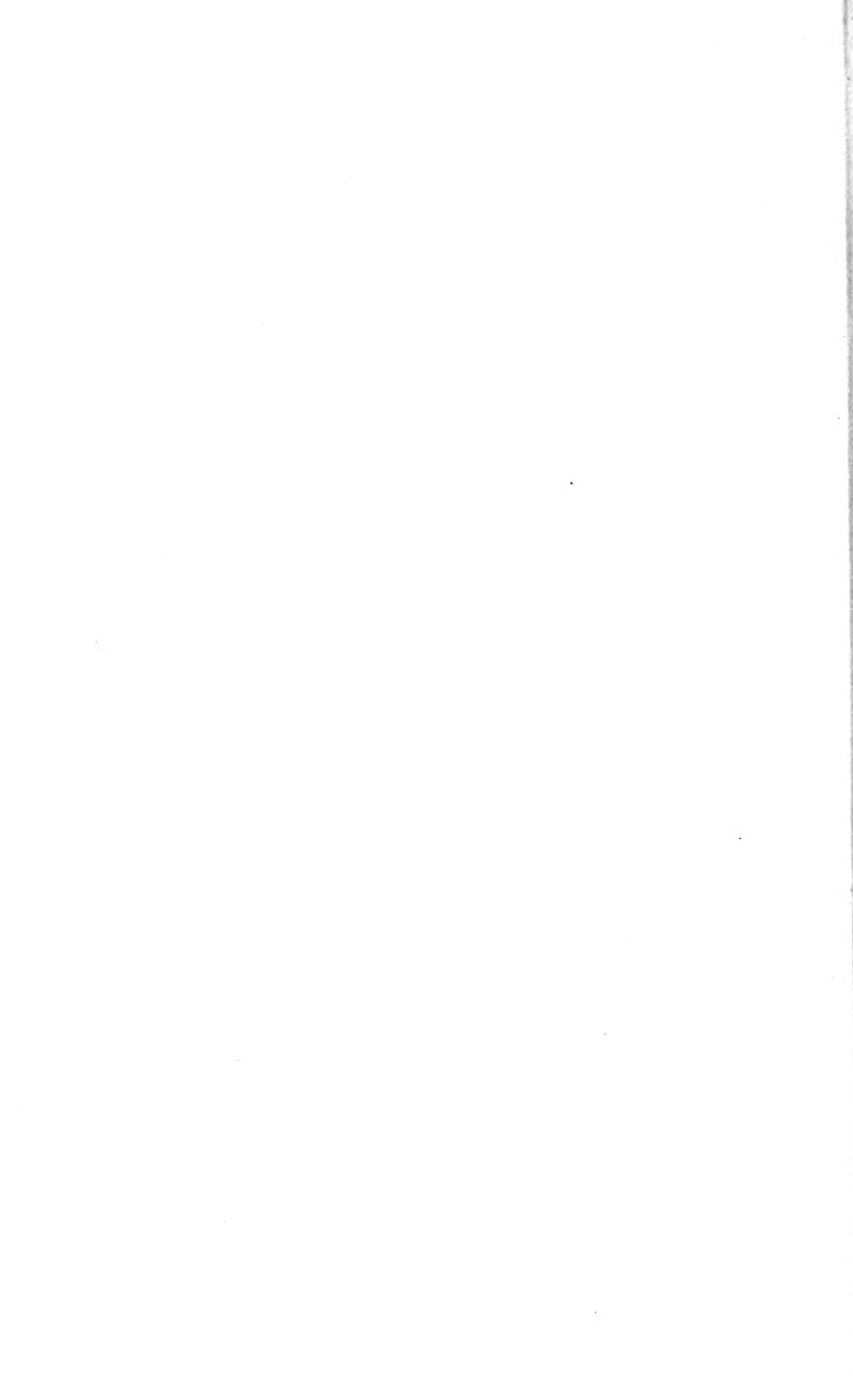
Great sums of money have been, and will in future be, expended in deepening the stream, up which steamers of 2,000 and 3,000 tons register come to load at the wharves. The wharfage accommodation is constantly increasing, according to the growing demands of the trade, and a company has been formed for the construction of an outer harbor, into which the largest ocean steamers could go without steaming up the creek at all. At present the fine vessels of the Orient Company are loaded at their anchorage off the Semaphore, by means of lighters, and receive and discharge cargo on both sides at once.

The Adelaide and Port railway crosses the Port river and LeFevre's Peninsula, the latter about a mile and a half in width, and has its terminus at the Semaphore, which is a favorite watering place, where rents are high in the summer time. On the Peninsula a branch of the railway goes northward to Largs Bay, which is the rival of the Semaphore, both as a landing-place and a place of residence and summer resort. Here one of the finest hotels in the colony, if not in Australia, and a jetty 2,300ft. long, are erected. On LeFevre's Peninsula are the two forts by which the chief harbor of the colony is to be protected from attack in time of war. A few miles to the south of Port Adelaide is the leading watering place of the colony, the town of Glenelg, where the pioneers encamped, and under the historical gumtree Captain Hindmarsh read his commission as Governor, and proclaimed the establishment of the colony. There are two railways from Adelaide to this town, which is six miles from the city, and since the opening of the first of these lines, the value of land at Glenelg has risen enormously, and the population greatly. There is a long jetty on which mails and cargo from the P. & O. boats are landed, extensive swimming baths, a large institute, excellent hotels, mansions, and villas, and well-made streets. The population is 2,724.

Between Glenelg and the Port, towns are springing up at Henley Beach and the Grange, and there can be no doubt all the sea frontages will be valuable from LeFevre's Peninsula to where the Mount Lofty range, sweeping round to the southwards, touches Holdfast Bay five or six miles from Glenelg. Between that point and Glenelg is Brighton, a favorite seaside retreat for those who prefer it to the gayer and more bustling resort of the votaries of pleasure and fashion.



Imperial Buildings, King William-street.



Eastward of Adelaide are the towns of Kensington and Norwood, with a population of over 10,000, and forming an important corporation; beyond, and in all directions, are towns and villages. Just south of the south park lands are Unley, Parkside, and Goodwood, forming a corporation named after the first-mentioned locality.

Leaving the metropolitan neighborhood, I will only mention a few of the principal towns. Twenty-six miles to the north of Adelaide is Gawler, which in the old days was termed the key of the north, and for years was the terminus of the railway. It has a population of over 1,800; it is the centre of a large agricultural district, and is famous for its flour mills, of which the oldest are owned by Messrs. Duffield & Co., and for its machine factories, of which the principal one, and the most extensive in the colony, is that owned by Messrs. James Martin & Co., whose iron foundry and all the other branches of their establishment well repay inspection.

About twenty-four miles beyond Gawler to the northward is Kapunda, originally a mining township, but now dependent more upon agriculture for its support; population, 2,290. The mine is still worked to a small extent by tributers, who have discovered fresh deposits. The railway branches off between Gawler and Kapunda, and one line leads to the Burra, 100 miles from Adelaide. The Burra was once a very bustling place, but since the mine was closed is very quiet. The railway leads through a number of northern townships, which have sprung up within the last dozen years, owing to the extension of the railway system and agricultural settlement. Port Augusta has a population of 767, is 200 miles from the metropolis, and has a harbor something like that of Port Adelaide, with a large wool trade, and, in good seasons, a considerable wheat export. There is great mineral wealth to the northward awaiting development, and it is confidently hoped that some good lasting mines will soon be regularly worked in that quarter. The port has special importance as the future terminus of the transcontinental railway.

Port Pirie, about forty-five miles nearer to Adelaide, has a railway system of its own, which, however, has been linked on to the great northern system. More wheat is shipped from this than from any other port in the colony, not excepting Port Adelaide.

The harbor, like the metropolitan one, is a creek, which is being deepened at the expense of the State; but craft of considerable size come up the stream.

On Yorke's Peninsula there are the mining townships of Wallaroo, Kadina, and Moonta. Wallaroo is a seaport town; it is an agreeable place of residence, with a safe and pretty harbor. The chief exports are copper, wheat, and flour. Kadina is four or five miles inland eastward. Moonta is eight miles to the southward, and distant about two miles from the sea, where, at Moonta Bay, there is a small shipping trade.

To the east and south-east of the Adelaide Plains, through the hills, at from twenty to thirty-five miles distance from the city, are a number of picturesque and healthy towns and townships, of which the principal are Mount Barker, Nairne, Echunga, Hahndorf, Lobethal, Blumberg, Gumeracha, and the corporate town of Strathalbyn. Most of these will soon be connected with the city by rail. More to the southward, washed by the Southern Ocean, is Port Elliot, a place of refuge from metropolitan summer heat. Four miles southward is Port Victor, the harbor in connection with the Murray trade, for which it competes with Port Adelaide. There is a fine breakwater here, extending from Granite Island, and jetties connecting the main land with the island.

The principal town in the south-east is Gambierton, a corporate town at the foot of Mount Gambier. The country here is volcanic, and the soil very rich. The far-famed Blue Lake is the crater of an extinct volcano. There are lesser lakes and numberless caves in the neighborhood. Seventeen miles distant is the open roadstead, known as Port MacDonnell, and to the westward from this, and nearer to Adelaide, are the harbors of Rivoli, Guichen, and Lacepede Bays, with their respective townships of Beachport, Robe, and Kingston. Beachport is connected with Mount Gambier, and Kingston with Naracoorte, by rail. Between Beachport and the Mount is the little township of Millicent, in the heart of the drained lands, which in time will produce great quantities of roots and other produce suited to the soil, and will fatten great numbers of live stock. Naracoorte, fifty miles inland from Kingston, is famous for the caves in its vicinity. They are of great extent, and when lighted up their spacious chambers and winding galleries, ornamented with stalagmites and stalactites, form a spec-

tacle of wondrous beauty. Great quantities of guano, so called, are procured from some of the caves, and valued as excellent manure. It is composed principally of the remains of marsupials. For many years in one of these underground recesses there lay the petrified corpse of an aboriginal, who, it was supposed, had retreated there to die after being shot in an encounter with the early white settlers. Some travelling showman one night carried off this curiosity. The act, though greatly to be deprecated, scarcely came within the description of any offence known to South Australian law, but Mr. Strangways, author of the Land Act bearing his name, is credited with having suggested that the body-snatcher should be proceeded against under a local statute for "removing stone without a licence." At any rate the plunder was recovered, restored to the cave, and enclosed with an iron railing. The showman, however, carried it off again, got safely away, and exhibited the curiosity in Europe.

Fifteen or twenty miles to the north-east of Naracoorte is Bordertown, where the railway systems of South Australia and Victoria will soon meet. Naracoorte and Mount Gambier are about sixty miles apart, and half way between them, on a fine plain, is the neat looking township of Penola. There are a few minor townships and hamlets in this part of the colony, which need not be particularised.

CHAPTER XII.

THE LAND—AGRICULTURE AND HORTICULTURE.

The first wheat crops—South Australia the granary of New Holland—Ridley's stripper—Farmers too exclusively stick to wheat-growing—The drained lands of the South-East—Roots, potatoes, and other crops—Progress—Experimental Farm—Scrub lands—Fruit trees and plants—The olive—Sericulture—The wine industry—Raisins and other dried fruits—Forest culture—Government plantations and nurseries—The land system—Concessions to distressed credit purchasers of agricultural land.

As this and the two following chapters will be devoted to the land and its raw products, it will be well here to show briefly what has been done with the territory of South Australia proper up to the latest date at which complete statistics have been furnished. The quantity of land alienated is 10,029,134 acres; leased for pastoral purposes, 150,564,000 acres; preferential right claims to leases for pastoral purposes, 15,274,240 acres; lands under commonage licences, 6,000,000 acres; leased for miscellaneous and other purposes, 1,391,132 acres; granted for education and University 295,000, acres; unoccupied Crown lands (including lakes), 59,610,294 acres; mineral leases and claims, 78,656 acres; gold leases, 2,344 acres. Total area of South Australia proper, 243,244,800 acres. Area under cultivation, 2,623,195 acres.

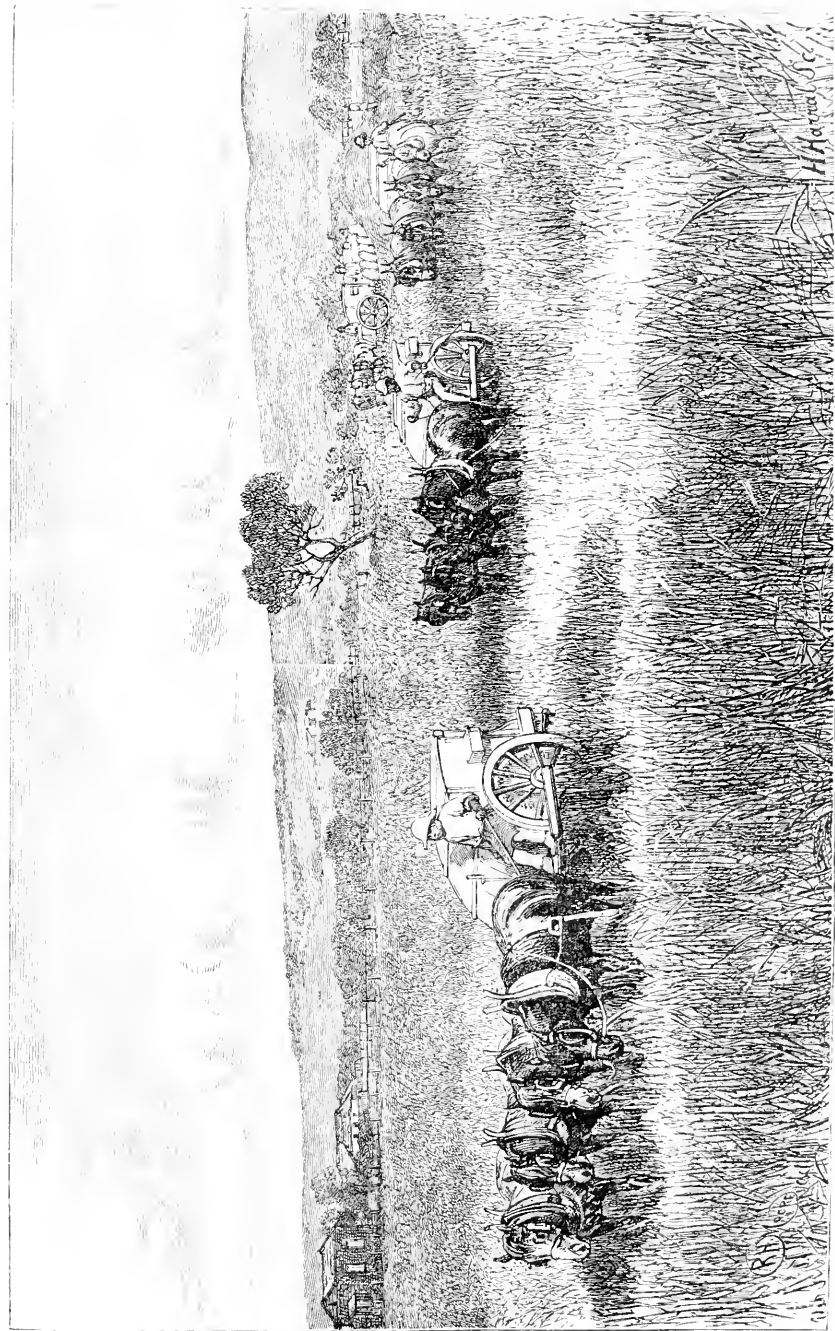
From a very early period of its history South Australia was known as an essentially agricultural country. Agriculture was its leading industry, and in fact is so to this day. For years the colony was called the granary of Australia, and now Victoria is the only one of the great Australian provinces independent of South Australian supplies of the staff of life. Victoria and Western Australia have both imposed protective duties on wheat and flour to keep the South Australian importations out, but in the case of the first-named of those two colonies the duty is now a nullity, as she exports wheat and flour. In the year 1838

Captain Sturt advised the South Australian pioneers not to attempt tillage on the Adelaide plains, or they would meet with grievous disappointment. Within three years of this time heavy crops of wheat were produced in that part of the country, and for many years in the neighborhood of Adelaide harvests of from twenty to thirty bushels, and sometimes more, per acre were gathered. This land is too valuable now for the culture of cereals. There are very few fields of wheat near Adelaide. On some of the land near the city hay is grown, but the greater portion is taken up by towns, villages, vineyards, gardens, and the suburban estates of the merchants and millionaires of the colony. The first crop of wheat was grown in the year 1839, within a mile of Adelaide, and was reaped in December of that year, perhaps part of it late in November. Those are the months for reaping on the plains; in the hills the harvest is from three to six weeks later. In those days Ridley's stripper, which takes off the heads and thrashes them, had not been invented; the corn must be dead ripe when that is used, as it has been on almost every farm, except in parts of the South-East, for many years, and therefore the harvest is about a fortnight later than it would be under the old system. Still, on the Adelaide plains and in the north and other districts, a crop of wheat may be garnered in by means of this machine before Christmas. It is only in very dry countries that this machine can be used. Forty years ago the available labor in the colony was insufficient to reap the harvest, and then Mr. Ridley, at that time the leading miller, and possessed of great mechanical ingenuity, constructed the first stripper, which worked successfully. Mr. J. W. Bull claims to have previously submitted to the "Corn Exchange Committee," in Adelaide, a model, with which this invention corresponds, and his claim has never been disproved, in fact hardly disputed. For very many years, however, owing to financial difficulties, he was unable to bring his invention into practical operation, and it is to Mr. Ridley South Australians are indebted for the introduction of a machine which revolutionised agriculture, and without which the great harvests of the colony could not possibly be gathered. In the *Adelaide Observer*, dated 23rd September, 1843, Bull's model is thus described—"His machine consisted of a long-toothed comb fixed to a close-bodied cart, the teeth being operated on by four revolving beaters with square edges, which would

“have the effect of taking off the ears and depositing them in “the body of the cart.” Had the journalist mentioned that the ears would be thrashed, his description would be applicable to the stripper of the present day. One of the wheels that bear the cart turns a cog-wheel and band, which work the beaters. One of these strippers, worked by four horses and a man, reaps ten acres in a day.

The crop of 1839 was 120 acres, yielding twenty-five bushels per acre, and worth 15s. per bushel. The price two or three years later went down to 2s. 6d., and in 1843 about £10,000 worth of wheat and flour was shipped from Port Adelaide. The history of farming proper since then has been mainly that of wheat production. Oats only thrive in limited areas, where the climate is cooler and moister than over the average of South Australian country. Barley will yield good crops over a far greater extent of country, but there are not such good foreign markets for it as for wheat; and, with respect to home consumption, farmers and brewers have disagreed as to how the grain should be gathered: the former wish to use the machine, on grounds of economy, but the maltsters complain that the beaters destroy in too large a proportion of the grains the germinating principle, and therefore greatly reduce the fitness of the corn for malting. On Kangaroo Island a considerable quantity of barley is grown, and thrashed with grooved rollers. One of these rollers—10ft. or 12ft. long, tapering from 2ft. to 2ft. 6in. or more at one end to a much smaller diameter at the other—is fastened at its small end by a ring to a stake or post, and drawn round by horses or bullocks attached to the large end. It makes very neat work where there is a good thrashing floor. The total production of Kangaroo Island, however, is small, and the brewers import the greater part of their malt.

The farmers, like other persons, will produce what pays them best for the present, without regarding the future; they are wrong in sticking so exclusively to wheat, but will find out their mistake in time, and correct it. About Mount Gambier they produce large quantities of potatoes. And there and about the drained lands to the westward, the agriculturists are turning their attention to grazing and fattening cattle and sheep. The drained lands will not, without proper manures, bear prolonged wheat cropping, though the first two or three crops are very heavy, but the soil



Reaping on the Farm of Mr. John Riggs.

will yield immense crops of roots and grasses. Potatoes should be an important product there. The area of these lands reclaimed and in the course of reclamation from the condition of marsh is about 100,000 acres, and 67,945 acres have been sold, the minimum upset price being £2 per acre—the value previous to drainage being next to nothing. An English farmer would be much more at home in dealing with this land than with any other in the colony. There have been some defects in the drainage, but these will doubtless be soon remedied.

In the Barossa district, north-east from Adelaide, some farmers are turning their attention to flax cultivation, which has also been tried in other parts of the colony.

Returning to the wheat product, which was about 3,000 bushels in 1839-40, we have a rapid increase up to the year 1850-51, when it reached about 400,000 bushels. The Victorian diggings then gave the great impetus to South Australian agriculture, and in three years the wheat production had more than quadrupled. The value of breadstuffs exported in 1854 was £316,217; in 1861 it was £712,789, though the price of wheat was much lower than in the former year; in 1867 it was £1,037,085; and in 1869 £890,843. Then Strangways' Land Act was passed, followed in after years by statutes further amending the land system. In 1876 breadstuffs to the value of £1,988,716 were exported, and the figures rose to £2,469,720 in the year 1880. Since then we have had bad harvests, and the exports of breadstuffs for 1882 amounted in value to £1,533,442.

The average wheat yield, taking one year with another, may be stated at about 8 bushels per acre; and it would be more, but for the lands taken up by farmers in the north, beyond the line where the rainfall is reliable and generally sufficient to produce fair crops. Last year the average was 4 bush. 13 lbs., that being the third consecutive year in which it was under 5 bush. The harvest of 1875-6 yielded only 3 lbs. under 12 bush. per acre, and the average for ten harvests commencing with 1871-2 was 8 bush. 16 lbs. The area under wheat crop last year was 1,746,864 acres.

That the style of farming must alter no one doubts, and attention is constantly being turned to other products than wheat. A mixed system of farming and grazing is coming into favor, and

land legislation in the future is likely to facilitate this. In the older districts the farmers make good profits out of dairy produce, pork, hams, poultry, &c., and within reach of the metropolis and other large towns hay is a profitable product. Considerable quantities of chaffed hay and bran are sent up the Murray and Darling, principally to supply the townships and settlers on the banks of the latter river.

There is a State experimental farm in the South-East, which has not been managed very well. One under the immediate care of Professor Custance has been established at Roseworthy, in the Barossa District, and much information of a useful character is to be gathered from the operations there; with a rainfall of only fourteen inches, the Professor reaped 26 bushels per acre off one plot of ground, through the use of artificial manures. The farm is, with regard to soil and climate, a fair sample of average South Australian country, so that the results of the experiments will be of general utility to the agriculturists of the colony.

Owing to the climate and the stripping machine, there is no country in the world where a crop of wheat can be grown and gathered so cheaply as in South Australia. Next in importance to the stripper, as a labor saving implement, is the stump-jumping plough, which, when it comes to a root, stump, or large stone, instead of sticking fast or breaking, gently rises, through the action of a balance weight, over the obstruction, and drops into its work easily and effectually on the other side. The value of this contrivance is owing to the quantity of scrub lands brought under cultivation. These scrubs are principally composed of what is called mallee timber, that is to say, small eucalypti, varying in the diameter from a man's wrist to his thigh, and sometimes his body. Of course it is of prime importance to clear this land as cheaply as possible, and the timber is felled or pulled down in various fashions, principally by animal power, and then burnt. Under the old system it would be necessary to grub up the stumps and roots, but the stump-jumping plough renders this expense unnecessary, and in the course of a few years those roots and stumps which have not been burnt or pulled up by the harrows and different implements, and removed, have completely rotted away.

The colony is eminently suited to horticultural enterprise. In South Australia proper all kinds of fruits, except those essentially



General view of Implements and Stock on the Farm of Mr. John Riggs, Gawler Plains

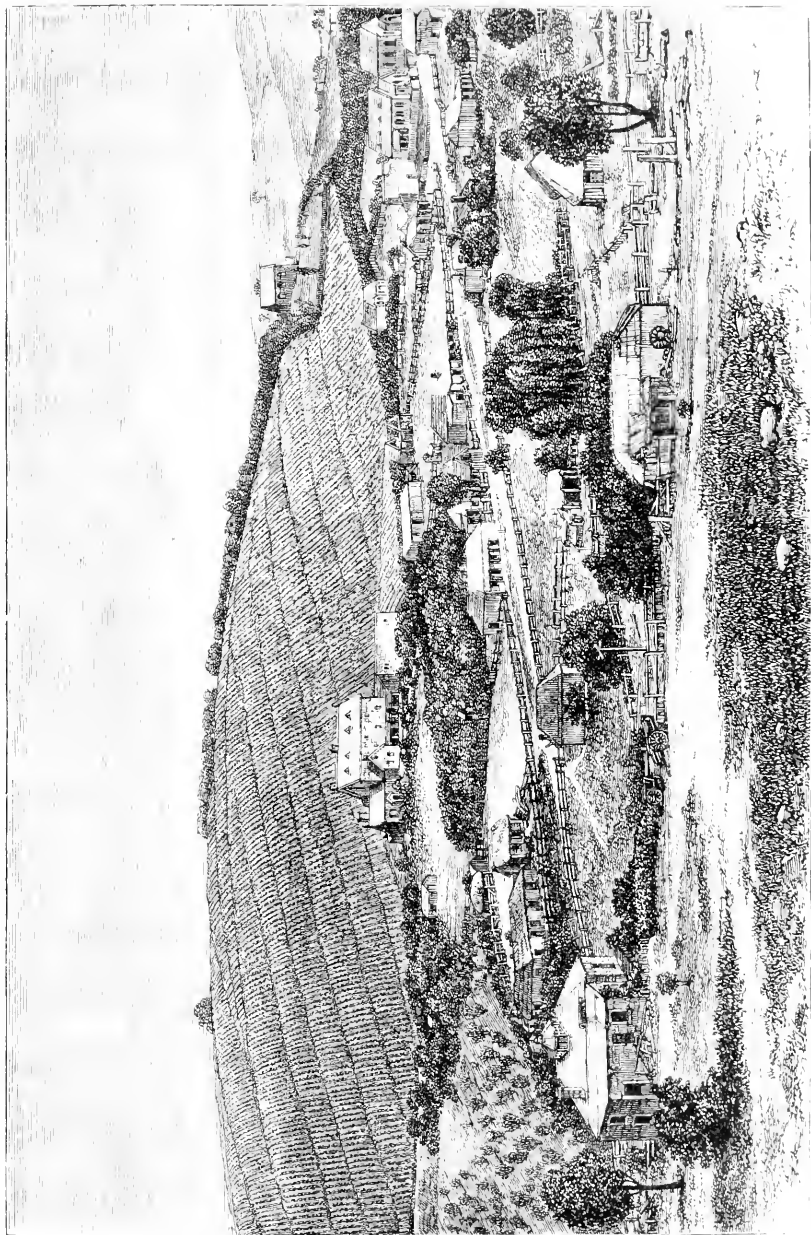
of a tropical character, can be grown. The vine thrives on hill and plain. Strawberries, raspberries, and other fruits found in perfection in cold climates, flourish in the mountain ranges. Apples and pears grow well almost anywhere, if there is a fair rainfall. The orange tree luxuriates in certain localities, where irrigation is practicable, and under those conditions bears an immense quantity of fruit. The olive will one day be a source of wealth to the colony. It grows almost anywhere, bears freely, and is not much affected by drought. Unlike wheat, the olive harvest would not be half ruined by a dry July or August, or two or three days of hot wind in September. Olive oil of the finest quality is made by several persons who have faith in this industry, and at the Adelaide Gaol, where there is a flourishing olive plantation. Connoisseurs pronounce the oil to be equal to any in the world. A few years ago there was some stir about sericulture, but little has been heard of it lately. The mulberry, however, to feed the worms, grows luxuriantly in the colony, and the climate is favorable; the industry will probably be established when labor is cheaper, and small farmers and gardeners have learned how to turn to the best account the time and labor of their families and those of the young people they are able to hire.

Foremost in the horticultural line is the vine, which undoubtedly finds congenial soil and climate in the colony. To establish such an industry as that of wine-making must necessarily, in a new country, require time, patience, and intelligence, and many disappointments and failures must be expected. But the tentative stage has now passed. The vines of South Australia have secured the approbation of the best judges in Europe, and there will be good markets in the old world for the produce of her vintages as soon as wines of certain qualities are made in sufficiently large quantities, so that heavy stocks can be kept. The exports steadily increase, and last year their value was £36,744. The home consumption is very great, and continually increasing; in fact, the colonial wine has largely supplanted the colonial beer in the harvest field, in cafés, and in private houses.

Raisins and currants are produced in perfection, and there is no reason why they should not be exported largely. Associated with these luxuries may be mentioned almonds, which grow almost anywhere, and can be gathered at small expense. Figs thrive,

but the art of drying and preparing them for market has not yet been mastered.

Probably scarcely any form of rural enterprise would be more profitable in the colony than forest culture, if those embarking in it would be content to wait from five to twenty years for returns. A few years ago the rapid disappearance of our native timber created much uneasiness, and the attention of the Legislature was directed with great persistency to the subject by Mr. Krichauff—a member of the Assembly, and one of the most prominent and useful of the German colonists, who are acknowledged to be a valuable class of settlers, who harmonize, as in America, with those of British race, and are true citizens, whose aim it is to promote the progress of their adopted country. An Act to encourage the planting of forest trees was passed in 1873. This was extended in its scope in 1876, and two years later an amending and consolidating Act was passed, providing for the protection of timber in the native forests from wanton destruction, and for the establishment of new forests and nurseries. A forest board was appointed; Mr. J. Ednie Brown, of great experience in Canada and elsewhere, was appointed as forest conservator; and a number of blocks of the Crown lands in different parts of the colony were proclaimed as forest reserves. The board was abolished a year or two ago, and its duties handed over to the Commissioner of Crown Lands, to whom the forest conservator is directly responsible. Mr. Brown's report for the year 1881-2 is of the most encouraging description. By the sale of waste timber, or licences to fell and remove it, and by letting portions of the reserves for grazing, the forest department more than pays its way. At the close of the year named the total area of the different forest reserves was 239,336 acres. There were planted, during the year, 189,710 trees; of these 112,000 survived, and those grown from seed and those which sprung up naturally, with existing saplings pruned and made available for timber trees, brought the grand total to 212,560. These, with the trees planted in previous years, made up about 800,000 under the care of the department. The greater proportion of the trees planted are indigenous to Australia. Foremost among them are many species of the eucalyptus. Then come pines and mimosas. Of the last-named the wattle well repays cultivation, coming to maturity in about five

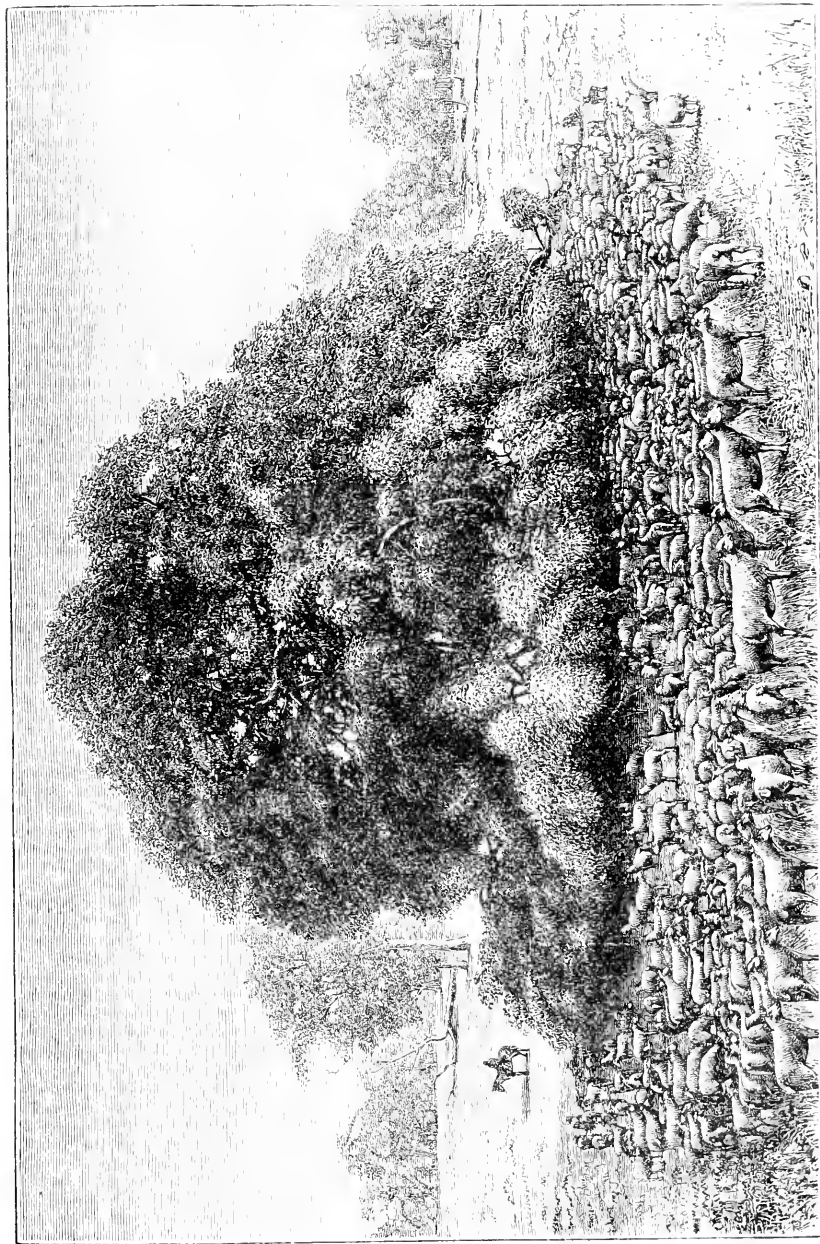


The Clarendon Vineyard, near Adelaide

years, when its bark is valuable for tanning and the wood is excellent for domestic fuel. Great numbers of English and foreign trees are also planted, including the oak, the ash, the elm, poplars, osiers, sycamores, walnuts, and many other trees, the object aimed at being to discover which species are best suited to particular localities. Encouragement is given by the department to public bodies and individuals to engage in forest culture. Young trees from the nurseries are given to corporations and district councils, to farmers, and other persons in the country districts.

In this chapter it is fitting that an account of the land system of the present day, as affecting the interests herein dealt with, should be given. The upset price of all country lands belonging to the Crown is £1 per acre, exclusive of the value of any improvements there may be, or of the cost of reclamation by drainage. The purchaser must pay ten per cent. of the purchase-money at the time of sale, ten per cent. three years afterwards; and then five per cent. yearly till the whole is paid, all these payments being considered purchase-money, no interest being charged. Should the credit selector fall into arrears with these payments, five per cent. is charged upon the arrears. The purchase may be completed at the end of ten years, or any time thereafter. The maximum area that may be held under credit selections is 640 acres of reclaimed, or 1,000 acres of other country lands. The mode of sale is auction, restricted, however, to agriculturists; that is to say, persons covenanting to cultivate and improve the land. In the first instance the competition is limited to persons undertaking to reside on the land, three months during the first, and nine months during each subsequent year, till the purchase is completed; after they are all satisfied, persons who will cultivate but do not undertake to reside on the land may compete. Before the end of the second year the purchaser, or credit selector as he is commonly termed, must expend 5s. per acre in improvements; 7s. 6d. in all before the end of the third, and 10s. in all before the end of the fourth year. The improvements are "to consist of all or any of
" of the following—erecting a dwelling-house or farm buildings,
" sinking wells, constructing water tanks or reservoirs, fencing,
" draining, clearing and grubbing the land." Fallow land in excess of one-fifth of the holding is counted an improvement. During the first year a tenth of the land must be ploughed, and

during every subsequent year a fifth must be under cultivation. On drained lands two-fifths planted with non-indigenous grasses are equivalent to one-fifth of ordinary agricultural cultivation. One acre planted with certain fruit and other trees, or vegetables, or such other trees as may from time to time be proclaimed by the Governor in Council for that purpose, counts as equal to six acres of ordinary farming cultivation. A breach of any of these conditions renders the land liable to forfeiture. The Commissioner of Crown Lands may waive the cultivation condition when, from the nature of the soil, he may consider it desirable. These agricultural holdings give right of commonage, originally at the rate of about twenty-six cattle or 160 sheep to each eighty acres ; but this commonage grows small by degrees, and beautifully less as the lands are sold. Inferior lands—most commonly scrub lands—may be leased for twenty-one years at a minimum annual rent of ten shillings per square mile, with right of purchase at any time during the last eleven years of the term, at £1 per acre. The maximum area to be held of these lands is 3,200 acres, the holder being required to clear one-fortieth of the land yearly of timber, till one half is in a fit state for agriculture. These holdings give no right of commonage. Lands that are specially proclaimed, or that have been offered at auction and remained unselected for two years, are dealt with in this way. These leases with right of purchase are offered at auction, the buyers naming or bidding the annual rent they will pay. It will be seen that the terms on which agricultural lands can be obtained are easy, but probably they will be still further liberalised by the abolition of the auction system, which has harassed agricultural selectors without benefiting the State. This change is the more probable, considering that some seven hundred of the selectors have, during 1883, been released from their agreements, and on their lands being again offered at auction, they have in nearly all cases repurchased them at 20s. 6d. per acre—the original prices ranging up to £7 and even more.



Flock of Sheep under a Gum Tree.

CHAPTER XIII.

THE PASTORAL INTEREST AND THE LAND SYSTEM.

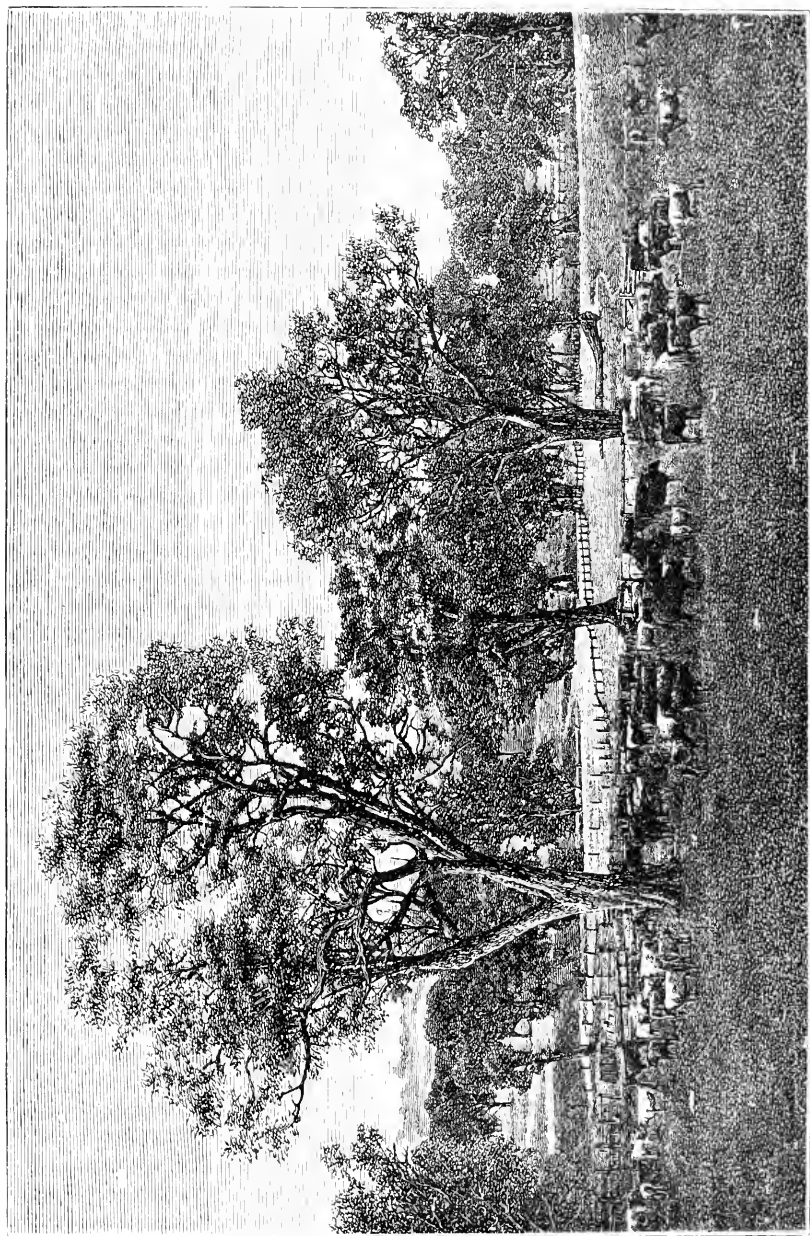
Definition of terms—Early importations of live stock by sea—The overlanders with cattle and sheep—Mr. Charles Bonney—Mr. Eyre, the explorer—Encounters of overlanders with the blacks—The Murray and Coorong routes—The Australian horse—Draught horses—Cattle—Durhams—Herefords—Driving cattle—Richness of the pasture—Cattle from Gulf of Carpentaria and their weight—Effect of fencing the country on travelling stock—Carrying them by rail—Sheep—The Merino—Other breeds—Crossbreeds—Great fall in prices of mutton between 1838 and 1844—Effect of the diggings—Mutton and beef rise again in value—Demand for store sheep for Queensland—Another fall to lowest rates in 1869—Since then prices have varied—Statistics—Diseases of the flocks and herds—The land system as applied to the pastoral interest.

IN commencing to speak of the pastoral interest, it is well to define terms. A large sheep or cattle breeder is ordinarily termed a "squatter," but the term strictly is applied only to pastoral occupants of lands leased from the Crown. The block he leases is called indifferently a run or a station, but the latter term is very commonly applied to the principal or a branch homestead. Thus people speak of the head-station or an out-station. The runs range from a few square miles up to several hundred in extent, and there are cases of a squatter or a squatting firm leasing one or more thousands of miles of pastoral country.

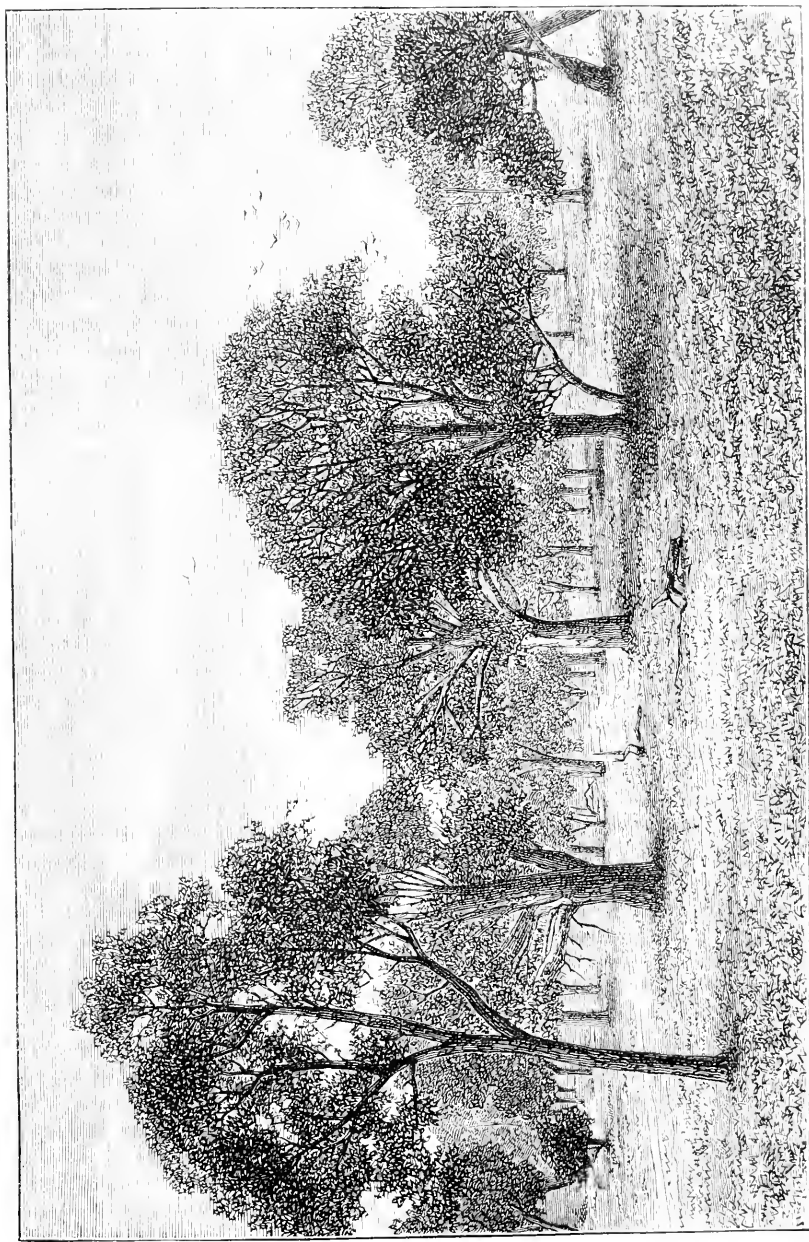
The pioneers of South Australia paid very dearly for their beef and mutton. The first importations of live stock were made seaward, principally from Tasmania and the Cape of Good Hope. In April, 1838, Mr. Charles Bonney, afterwards Commissioner of Crown Lands, whose name for nearly forty-six years has been associated with the history of South Australia as that of one of the most useful colonists, arrived at Adelaide, with the first "mob" of cattle overland from New South Wales. He started from the river Goulburn and followed the Murray down to the North West Bend, when he left the river, and, striking across country, met

with the first white men on the river Onkaparinga, at a bend known as the Horseshoe, about twenty miles south of the infant metropolis. The cattle were in splendid condition, and scarcely one had been lost on the way. A few months afterwards Mr. E. J. Eyre, who subsequently distinguished himself as a daring explorer, and was Governor of Jamaica during the last outbreak among the colored population, followed with another mob. Other "overlanders," as they were called, with their mobs of sheep and cattle, quickly succeeded the pioneers. Mr. Bonney, after his Murray trip, brought cattle and sheep along the coast or Coorong route, and by the Lakes, crossing the Murray at or near what was soon afterwards recognized as the regular crossing-place. A small township, named after the Iron Duke, which has not grown very much, was established there, and provided with a punt for the use of travellers on horse or foot, or in vehicles. The overland routes were soon well-known, and cattle and sheep by hundreds and thousands poured into the country. The aborigines were troublesome to the overlanders for some time; serious conflicts took place; some of the whites were murdered and their cattle scattered; but in the year 1841, on the Murray route, the blacks were taught such a terrible lesson by a combined force of South Australian police and volunteers, and a New South Wales party of overlanders, that they have never given any trouble since to travellers in that region, either with or without live stock.

Besides sheep and cattle, horses were brought over in considerable numbers, and of the kind best suited to the wants of the pastoral settlers. The Sydney stock horse—the colonies were generally described by the name of the capital—for pluck and endurance could not be surpassed in the world. He had a strong dash of Arab in him, and was capable of an immense amount of fatigue, with no food beyond the natural grasses. For a week together one would, on a pinch, travel from fifty to seventy miles a day. A hundred miles a day has often been covered by the Australian horse. The journey from the Burra to Adelaide is that distance, and more than one or two of the old colonists have accomplished it within twelve hours with a single horse. The New South Welshmen, as Dr. Lang called them, were fond of racing, and as that sport was in its infancy in South Australia, the pedigree of a racer was considered fairly good if, with a sire of recognized English



Herd of Mixed Cattle.



Bush Scene, near Angaston.

blood, it could claim a "Sydney mare" for its dam. Heavier horses came later, and it was some years before they were used generally for the plough; this work was performed by bullocks, four or six being used, according to the character of the virgin soil to be broken up. They of course required, besides the ploughman, a man or a youth to drive them. Double-furrow ploughs were unknown then, and oxen being slow movers, an acre was the utmost that could be turned over in a day. Now, with the double-furrow plough and three horses, one man ploughs from two to three acres a day. The draught horses came more from Tasmania than anywhere else, and the breed has been kept up or improved by costly importations from the United Kingdom. Clydesdales have been most in favor, but some Suffolk Punches have been imported, and a few Lincolnshire horses.

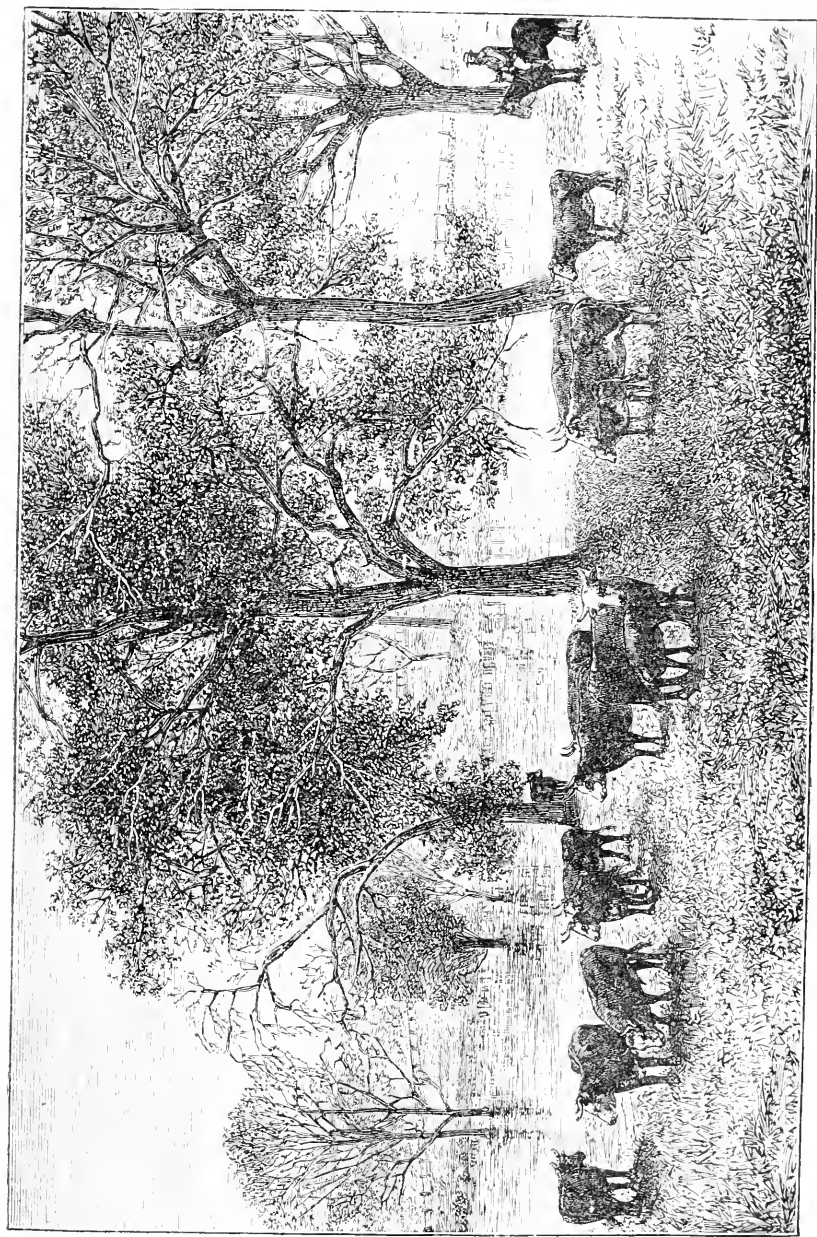
Of cattle, Durhams have all along been most in favor; but there are some remarkably fine herds of Herefords. Mr. Price, of Hindmarsh Island, has been about the most noted breeder of these animals, and Mr. John Angas, who spent great sums of money in stud stock for the farmer and grazier, has produced some very grand specimens of the breed. The Durham, or shorthorn, appears to thrive in all climates, tropical, temperate, or cold, if the feed be plentiful. They are driven across the continent, and gain flesh on the journey, till they get into the agricultural districts, where the land is fenced. Some years ago, among a fine herd driven from the Gulf of Carpentaria to Adelaide, a distance of twelve hundred miles, a cow killed fresh after the journey, weighed 1,000lbs. She was not a large-framed beast, but the fat was of great depth. The time for driving cattle or sheep great distances to market, however, is passing away. Where the pasture is good, if the drovers are careful and understand their work, the stock do not lose flesh in travelling, and the expense of droving is trifling; but now that for hundreds of miles the land is fenced, leaving only "travelling stock reserves," always kept bare of feed by trespassing animals, the case is entirely different, and it is more profitable to send sheep and cattle by rail than to offer them in low condition to the butchers. The railways, too, are especially needed by squatters in bad seasons. Beyond wide belts of drought-afflicted country, across which it would be impossible to drive fat stock, are "runs" where sheep

and cattle are fit for the knife, and not the best but the only way to deliver them in condition fit for the butcher is to send them by rail. This is the case not merely in South Australia, but more or less in all the colonies of New Holland, so that the live stock traffic on the railways, already extensive, must grow to enormous proportions. Cattle from Queensland are sent to Adelaide by the Port Augusta railway.

Sheep are, generally speaking, more profitable than cattle, which they supplanted many years ago over an immense extent of territory. The principal breed, as every one knows, is the Merino, first introduced into Australia by Capt. John MacArthur, of New South Wales, at the close of last century. In all these colonies the breed has been brought to a pitch of excellence unprecedented in the world; squatters have long ceased to import stud Merinos from Europe, as they are certain they could not introduce foreign blood into their flocks without injuring them. Wool and carcass have improved. The weight of a good Merino is about 60lbs., but heavier sheep of the breed are killed. The wool in the European market is the most valuable of any fleece in the world. A considerable number of stud Merinos are exported from South Australia yearly. Twenty years ago Queensland squatters imported largely, not simply stud sheep, but many flocks for their new runs from South Australia, the numbers amounting to several hundred thousand in one year.

On stations within tolerably easy reach of Adelaide, and where the country and pasture are suitable for sheep of a heavier kind, long-wooled sorts, principally Lincolns and Leicesters, are bred. They thrive, and are quite a feature at the agricultural and pastoral exhibitions of the colony. Their wool of course is not so valuable as that of the Merino, but then there is more of it, and the carcass is twice the size. The lambs are a special source of profit, as they are large enough for the butcher earlier than the Merinoes are. Cross-bred sheep are in favor with some graziers, and there are a few South Downs, and fewer Cotswolds. Australians do not prize themselves specially on any sheep but the Merino, which must remain most in favor as the best suited to the greater part of New Holland, and the most profitable.

In 1838, the year in which the first live stock were brought overland, there were 28,000 sheep in the colony. The number



Herefordshire Cattle, Angaston.

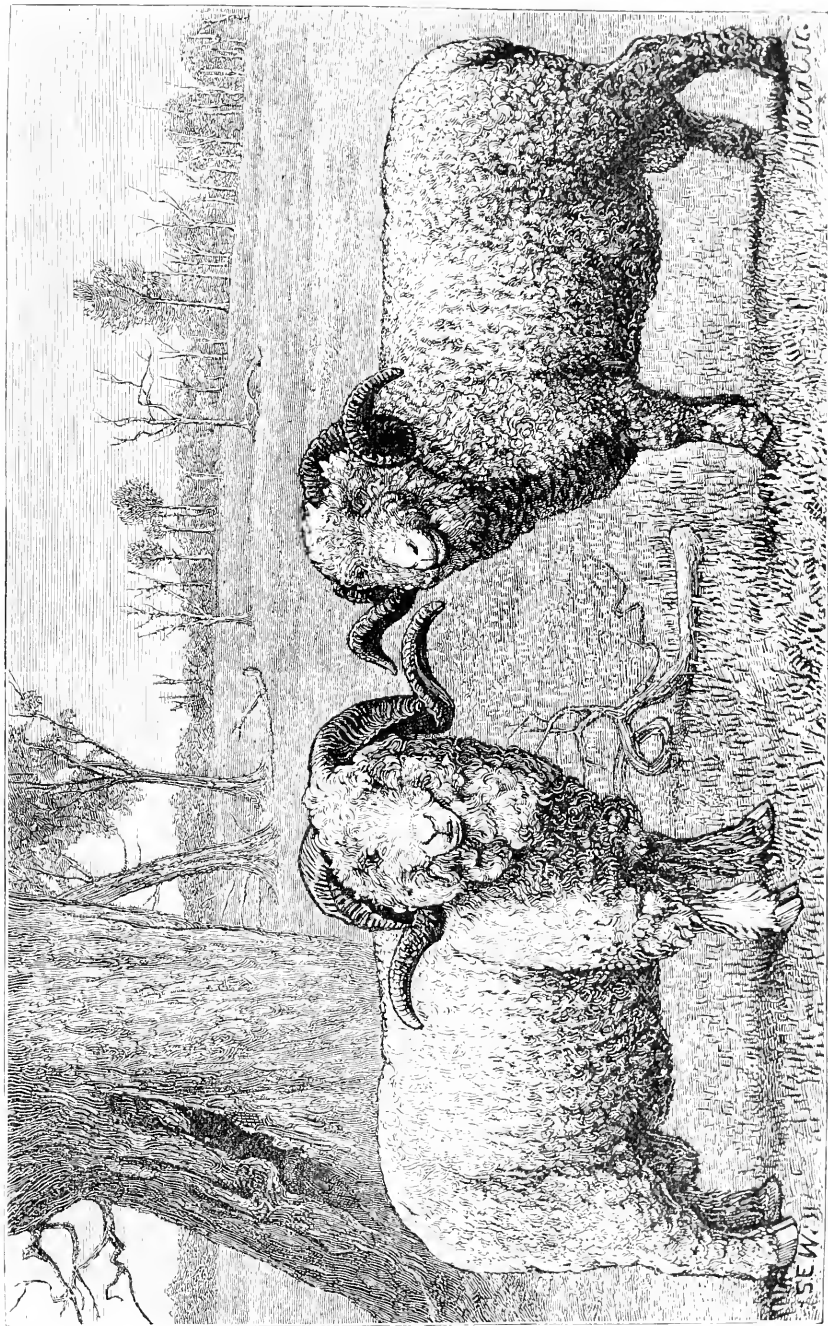
was nearly quadrupled next year, and in 1844 had increased to 450,000. During the same six years horned cattle increased from 2,500 to 30,000; horses from 480 to 2,150; goats and pigs from 780 to 12,000. The market was, soon after the last-named year, so glutted with sheep that they were boiled down by thousands for their tallow. Mutton was about $1\frac{1}{2}$ d. per pound, but at the boiling-down establishment fine legs could be bought for 6d. each. The freezing process of preservation had not been introduced then, and steamers did not trade between the old country and her distant dependencies in the South Seas. The discovery of the Victorian diggings made a complete revolution in the squatting interest and the meat trade. Mutton rose to three or four times its previous value, and the price of beef advanced in proportion. Squatters became suddenly wealthy in all the colonies; and some of those who soon after parted with their stations, at what seemed immense prices, subsequently found that had they waited a few years they would have obtained from twice to five times as much as they accepted. For some years, in South Australia, the price of meat was kept up by the drain upon the country for store sheep for the new runs established in the distant parts of the colony itself and in Queensland. In 1869, however, prices came down to the old ante-diggings level. A side of a fat sheep was bought in the retail market for half-a-crown, and boiling-down once more came into fashion. Since then prices have varied with the seasons, and probably they will be low during 1884, the abundant rains of the past year having been so favorable to the pasture. But the establishment of the frozen meat trade must prevent sheep and cattle from becoming a drug in the market, as in years gone by.

In 1881 there were 6,810,856 sheep, 314,918 cattle, and 169,678 horses in the colony. All through Australia, excepting Western Australia, the flocks are absolutely free from scab. In South Australia, as elsewhere, footrot is troublesome in damp pasture land, but it is only within limited areas this disease prevails. In much the same sort of country fluke is a source of anxiety and loss. There is also what is known as the coast disease, prevailing, as its name implies, near the sea. The principal symptoms are giddiness and staggering; and a removal of the affected flock farther inland effects a cure. Altogether the total amount of ovine disease is very small in proportion to the numbers

of sheep in the colony. At times there is pleuro-pneumonia among the cattle in some parts of the country, but, as a rule, the herds are healthy. Horses are rarely troubled with epidemics. The losses of live stock through poisonous herbs are, on the whole, very small.

The terms on which land has been leased for pastoral purposes have been reasonable as far as they applied to country fairly watered, and within reasonable distance of the seaboard or of markets; but more liberal regulations are needed for the distant country. From the foundation of the colony the principle was recognized that the shepherd kings and cattle breeders leasing the waste lands must retire as the plough advanced. Their rents were trifling, ten shillings per square mile, but they were expected to move back at six months' notice. For some years they simply shifted farther away from the metropolis or seaboard, perhaps to as good pasture as they left; but in later times—as the rich grazing country available became scarcer and more distant, and lands they had occupied being always sold at auction—they purchased the freehold, the farmers having no chance in the competition against these nabobs. This system was greatly abused by impecunious Treasurers. The process was called “killing a squatter.” Perhaps the land was not even asked for by farmers; but money was wanted for roadmaking or to cover a deficit, and a squatter received six months' notice to quit, as his run was to be sold; the consequence often being that he bought most or all of it himself. In this way some of the large estates of the colony were created.

A better mode of dealing with the Crown lands followed. The principle came to be accepted that as a rule the freehold of land should not be parted with for pastoral purposes, and from the time of the passing of Strangways' Act, in 1869, not much land has been sold outright, except to agriculturists. For several years after that Act was passed, some squatters, by means of dummy agricultural selectors, evaded the law, and acquired considerable quantities of land; but this abuse was checked by legislation, and large estates can only be built up now by a slower process, and principally of lands more or less exhausted by cropping. Now most of the good country within two hundred miles of Adelaide is freehold, or held by the agricultural purchaser on credit from the



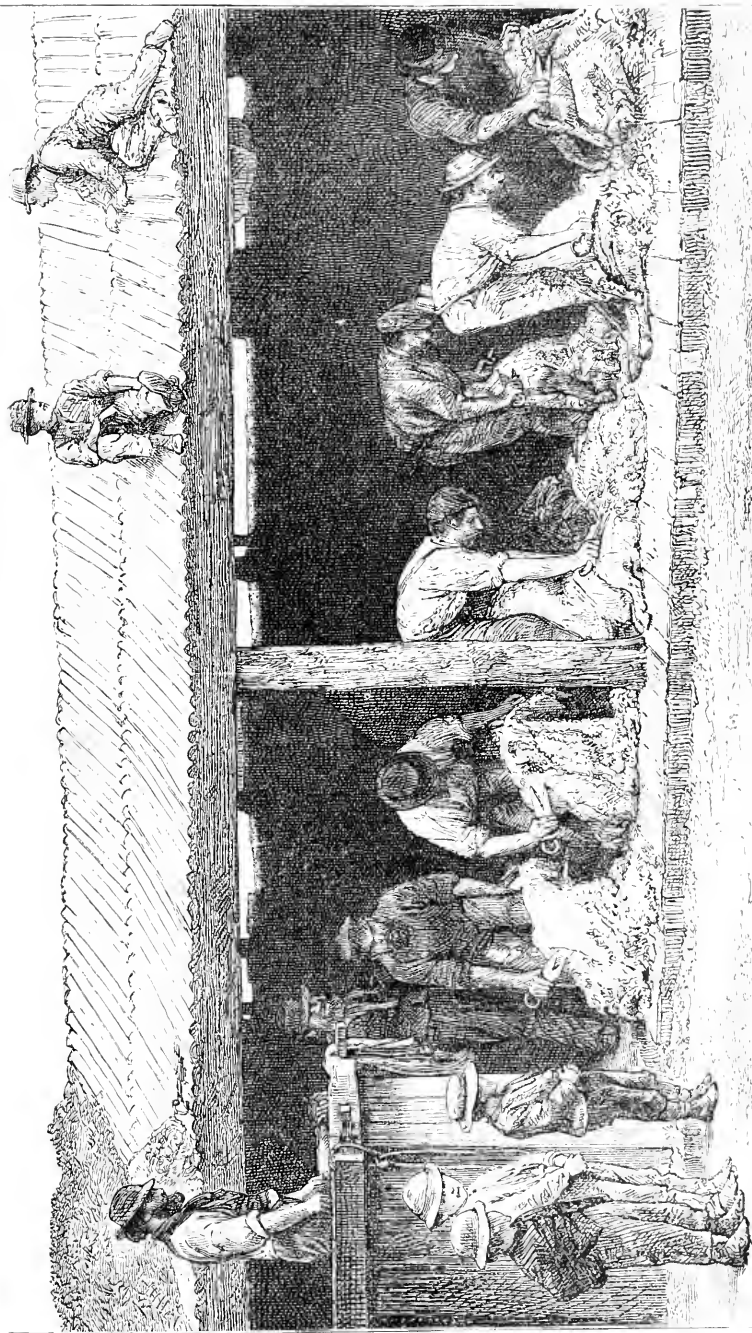
Pure Merino Rams.

Crown. Beyond is country within a reasonable distance held by the squatters, whose leases will expire four or five years hence, and what is to be done with this land has yet to be determined by the Legislature. The question to be decided is, whether the runs shall be let at a valuation, or the leases put up to auction, as may be done under the present law. All these leases can be resumed after twelve months' notice, the lessee getting reimbursed for improvements if the land is sold. Farther away is country which from its distance is not so valuable, and this will doubtless be let with greater security of tenure and on easier terms than have hitherto prevailed. The carrying capability of South Australian pasture land in its natural state ranges from forty sheep to the square mile to a sheep to the acre. On the drained lands in the south-east several sheep might be reared and fattened on an acre, probably eight or ten, if the land were planted with the best foreign grasses.

Pastoral leases are granted for twenty-one years at a rental of one shilling per head on the average number of cattle, or two-pence on the average number of sheep. The minimum rent per square mile is 2s. 6d. At the end of the term the land reverts, with all improvements, to the Crown. Should it be resumed during the currency of the lease, the lessee is reimbursed for improvements to the full extent of their value if the resumption is during the first half of the term of the lease, half their value if during the third quarter of the term, and one-fourth value if during the last quarter of the term. Even at the expiry of the lease, if the Government resumes the land, dams, tanks, and wells of a permanent character, available for the use of cattle or sheep, are paid for by the Government. Some of these lands may be resumed after twelve months', and others after three years' notice, according to their position. To distinguish them, they are classed and scheduled. Annual leases of unsold pastoral lands that have been resumed for agricultural purposes, and declared as "hundreds," may be granted for grazing cattle or sheep, but not so as to interfere with the commonage rights of agricultural holders. The squatter whose land has been resumed and declared a hundred, has a preferential right to an annual lease. The object of the annual leases is that the land shall be profitably occupied simply for grazing till the farmers want it, and no longer.

The more distant or inferior country may be let for fourteen years with right of renewal for an equal term. The rent is, for the first fourteen years, 2s. 6d. per square mile, and a penny per head on the average number of sheep, and sixpence per head on the average number of cattle; this is all doubled for the second fourteen years. All improvements of any kind revert absolutely to the Crown at the end of the second lease. There must be three years' notice of resumption. If the resumption occurs during the currency of the first fourteen years, the lessee must be paid the full value of all improvements and for the loss sustained by the resumption—or, in other words, the market value of his lease, except that he is not to be paid for the increase of value arising from natural waters or expenditure on roads or railways, or upon adjoining lands. If the resumption takes place during the second term of fourteen years, the lessee must be paid the full value of all improvements, but not for loss by such resumption. If there is no resumption, the lessee will be paid the full value of all wells, dams, and reservoirs of a permanent character which increase the stock-carrying capabilities of the lease.

These provisions are not considered sufficiently liberal to encourage the pastoral occupation of the dry country, where great sums of money must be expended in well-sinking and water conservation in order to make the land available. On one run in the colony £150,000 have been expended in this way, and when so much capital is expended something like security of tenure for a long term is needed, or ample compensation for resumption. Bills for liberalising the law dealing with the pastoral interest have been unsuccessfully submitted to Parliament during the last two or three sessions, but their rejection has been connected simply with matters of detail, and there is no doubt that a measure dealing comprehensively with the question will be introduced early in the first session of the new Parliament, which will meet a few months hence. Anyone can take out a preferential right to a lease of dry country on which he is intending to sink for fresh water. This right is for twelve months, and may be renewed by the Commissioner of Crown Lands if he is satisfied that the holder has honestly endeavored to obtain fresh water, but has been hindered by drought or other circumstances beyond his control. The maximum area to be held under such right is 1,000 square



Sheep Shearing.

miles; but it is obvious that this provision is easily evaded by persons combining together to monopolise large tracts of country. Complaints have been made of monopolists holding thousands of miles of pastoral land on speculation without stocking it; but this evil can be checked by stocking conditions, strictly enforced. There are provisions for resuming portions of runs for roads and railways. The Government has power also, to search for water, sink wells, and resume the land to the extent of not more than one square mile on which water has been so obtained, paying the lessee for any improvements on the land. Anyone has full right to mine or search for minerals on any run, and any portion of a run may be resumed for mineral purposes.

In the year 1881 the sheep numbered 6,810,856; cattle, 314,918; horses, 159,678. It is confidently believed that if the settlement of the distant country is encouraged by liberal and judicious legislation these numbers may be quickly doubled. The extension of the Great Northern Railway will materially aid in the development of the fine pastoral country of Central Australia.

CHAPTER XIV.

THE MINES AND MINERAL LEASES.

The mines and mineral leases—First impressions of the early settlers—Mr. Menge—The Glen Osmond and other silver lead mines—Copper mines: The Kapunda mine; The Montacute; The Burra—The Wallaroo and Moonta gold mines; The Bird-in-Hand; The Alma—Miscellaneous—Silver, lead, copper, bismuth, gold—Exports—The land system and mining regulations.

To those of the first settlers of South Australia who possessed any knowledge whatever of geology, or the features of mineral country, the new land to which they had come presented the appearance of one rich in minerals, that would some day, sooner or later, be developed. Among the pioneers was a Mr. Menge, remarkable for his linguistic and other attainments, and a clever and enthusiastic mineralogist. He from the first prophesied a great mineral future for the colony, and spent months at a time wandering over the hills and plains, camping at night by himself in the bush, or finding hospitable shelter at the early settlers, widely-scattered homesteads and huts. During his wanderings he collected a great number of mineral specimens of various kinds, including gold and precious stones. He declared that on Yorke's Peninsula there were great deposits of copper, and a quarter of a century later, the Wallaroo and Moonta mines were discovered there. The eccentric old *savant* did much to excite interest and sustain belief in the vast mineral resources of the country. On the discovery of the gold diggings in Victoria, he went to that colony, and was the first man who worked an auriferous quartz reef there, the attention of the diggers, up to that time, having been confined to the alluvial. He died in his tent on the diggings in the year 1852.

The first mine opened was at Glen Osmond, on the face of the range overlooking the city, about the year 1840. From this considerable quantities of silver lead were soon taken, and smelting-

works were established. The Wheal Watkins and Wheal Gawler silver lead mines, both on the same slope of the range, and both within a mile or two of the first find, were discovered a few months afterwards, and worked for some time; but all these mines were abandoned as unprofitable. There have lately been rumors of a company being about to be formed to work one or more of these properties. It is not unlikely that the speculation would prove remunerative, for mining machinery and processes have greatly improved during the last forty years, and capitalists embarking in such enterprises have more patience—or perhaps it would be more correct to say more ample means, to wait for good results than the early settlers in a new country can be expected to possess.

The Kapunda copper mine, about fifty miles from Adelaide, was found in 1842, and made the fortunes of its discoverers. Ore is still being raised from it, and fresh deposits may at any time be met with on the property. The Montacute copper mine, in the Mount Lofty Range, about a dozen miles from Adelaide, was discovered about the end of 1843, and early next year the land was sold by the Government at auction. During 1844, 600 tons of rich copper were raised from this property, and for some years there was a good output, but the lodes were apparently worked out, and the proprietors would not risk the cost of exploratory working.

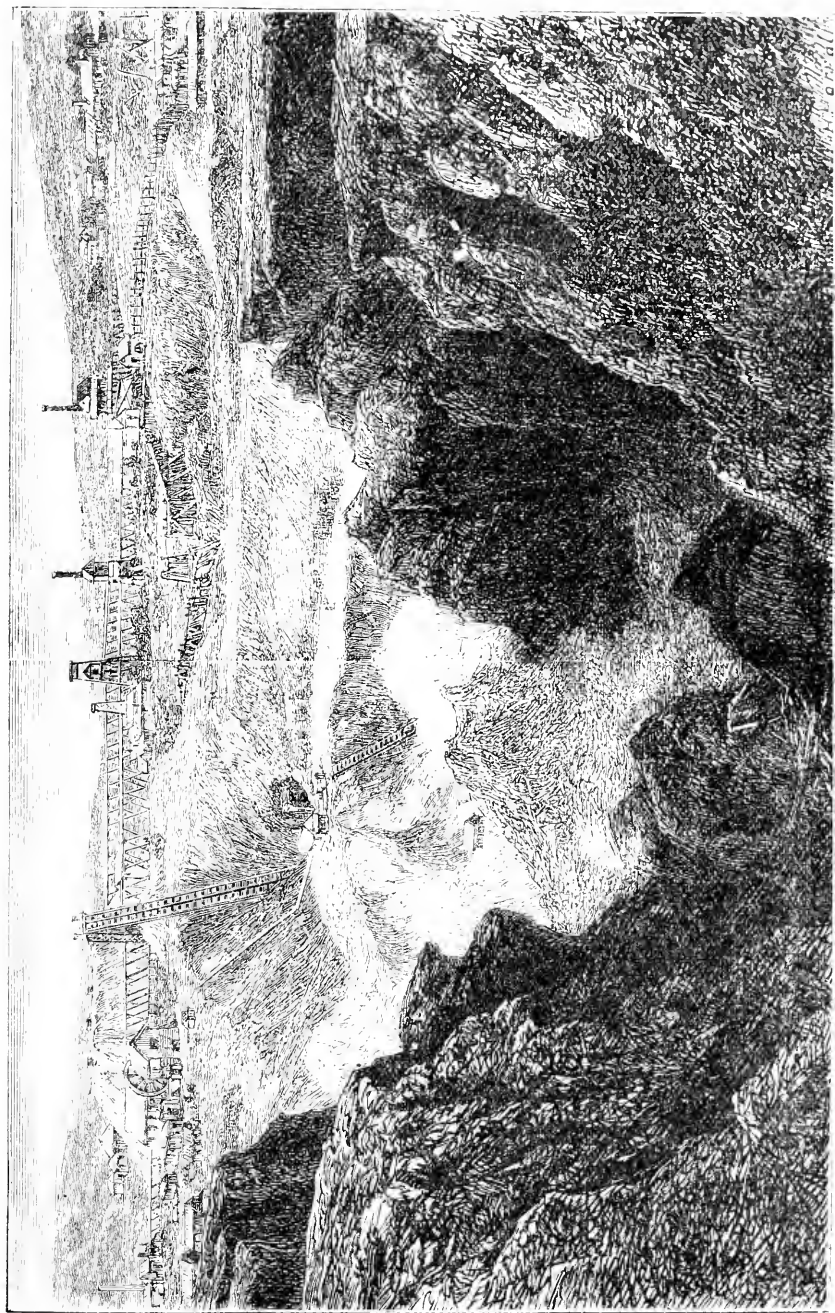
But the mineral discovery that marked a new era in the history of the colony was the Burra, which at one time supported a large population; afforded employment to thousands of miners, mechanics, laborers, carters, and tradesmen; attracted population from abroad, and gave a wonderful stimulus to South Australian progress. This mine, a hundred miles from Adelaide, in a northerly direction, was discovered in 1845. The capital invested in it was £12,320 in £5 shares, and no subsequent call was ever made upon the shareholders. The shares at one time were worth £200, and returned £40 each in a year in dividends. Altogether the mine paid £800,800 in dividends. Some years ago the property was sold to a new company, and it is not now being worked. The lodes ran out, and the company grew tired of the expenditure incurred in trying to pick them up again. This was the last important mine of which the Government parted with the freehold. It was worked with grand results till the Victorian diggings drew

the miners away in 1851-2; was re-opened after the gold fever subsided, and worked for more than twenty years.

During 1860 and the two following years the great cupreous discoveries of Yorke's Peninsula were made. The Wallaroo mine was found by the lessee of the sheep run on which it was situated, Mr. (now Sir) William Watson Hughes; and there quickly set in a mining mania, most of the discoveries disappointing expectations sooner or later. The far-famed Moonta was opened a year or two later. These mines have been working more than twenty years, but neither shows signs of exhaustion. Neither mine ever cost the proprietors a farthing. They had debts of magnitude on the property, and thereby ran risk of loss, but no capital was ever paid up. From the Wallaroo mines 391,549 tons of ore have been raised, containing 37,710 tons of copper, and the dividends paid amount to £372,256; but it is rather a long time since this mine returned a dividend. But the large smelting works owned by the same proprietors at Wallaroo Bay, and near Newcastle in New South Wales, and worth £100,000, have been built out of the profits, and contributed to the dividends. The Moonta has yielded 424,993 tons of ore, representing 83,826 tons of copper, and paid £1,072,000 in dividends. Next to this mine is the Hamley, belonging to another company, which has paid dividends for many years. The Paramatta was at one time a dividend-paying property, and many others have yielded copper, though not in satisfactory quantities, or for a sufficient time to make a return for the money invested in them.

In the North, high hopes in days gone by were entertained of the Yudanamutana, the Blinman, and other copper mines, some of which are now in the hands of an English company that is spending money freely in their development, while others are being tested by smaller associations. Operations are proceeding on one property near Farina, and the Great Northern Railway from Port Augusta will render it practicable to work profitably mines that otherwise would be worth nothing.

As a rule, the best mines of the colony have been either, like the Wallaroo and Moonta on a plain, or like the Burra and Kapunda among low ranges, or in a gently undulating country. Where the locality is mountainous the lodes do not last, and there is great uncertainty where to look for them. This applies especially to copper and gold, but of the latter metal South



Burras Copper Mine looking north.



Australia has not yet turned out large quantities. The Bird-in-the-Hand, in the Woodside district, twenty-six miles from Adelaide, has yielded a considerable quantity of gold from its quartz reefs, the percentage of the precious metal ranging from 6dwts. to about 1oz. to the ton. Over two hundred miles, in a north-easterly direction from Adelaide, in the Waukaringa district, about £15,000 worth of gold has been taken from the Alma mine, the yield varying from 5dwts. to 17dwts. to the ton of stone. Want of a good supply of water for crushing purposes has been the principal trouble, and should this difficulty be overcome, the mine and others on the same line of reef will become payable investments, as the quantity of gold-bearing stone is apparently unlimited. In Victoria 6dwts. of the precious metal to a ton of stone is considered a fair paying result, guaranteeing dividends if the yield is lasting.

I have not mentioned a twentieth of the mines that have been formed and worked during the history of South Australia. Near Cape Jervis the Talisker, and other silver lead mines, were worked for some years. The Balhannah mine, in the Mount Lofty range, yielded copper, gold, and bismuth. In the Barossa district, from the Lady Alice and the Malcolm's Barossa mines, copper and gold were obtained. Silver lead was raised in promising quantities at the Almanda mine a dozen years ago, and the discovery caused one of those manias which set in every few years in South Australia. The Almanda lode ran out, and a general argentiferous collapse followed. About Callington, nearly twenty miles from Adelaide, on the route to be taken by the railway to the Victorian border, copper mines were worked for many years, and it is hoped that some of them will be well tried again when the iron road reduces the cost of transport.

Mining in South Australia, as in other countries, gives many blanks to one prize; but the community as a whole profits by the lottery. The Moonta or the Burra has paid several times over for all the expenditure that has been wasted in working many disappointing discoveries.

The value of minerals exported in 1843 was £127; in 1866 it was £821,501. The exports have always fluctuated in value, falling to £574,090 in 1870, and rising to £806,364 in 1872; in 1880 the value was £347,246; the following year £420,558. The supply of minerals is inexhaustible, but the output and export

value will vary with the rate of wages and the price of copper in the European market.

The terms upon which mineral lands can be leased from the State are on the whole easy. For nearly forty years it has been a recognised principle that mineral lands should remain in possession of the Crown, so that they shall not be monopolised, and, perhaps, locked up instead of being developed. The main object is to have them giving forth their riches, so furnishing employment to working men, creating internal markets for produce, stimulating trade, and, by swelling the exports, adding to the wealth of the colony.

The law relating to mineral leases and licences, so far as the baser metals are concerned, is contained in the Crown Lands Consolidation Act of 1877 and one clause of the amending Act passed in 1882. Gold mining is dealt with in Act No. 26 of 1870-71. The Governor may grant leases for any period not exceeding ninety-nine years, of any Crown lands in blocks not greater than 640 acres, for the purpose of mining for any minerals except gold. The rent is one shilling per acre, and a further sum of sixpence in the pound on all net profits. The lessee is bound to expend, in every two years during the term, a sum equal to £6 for each and every acre, or during nine months in each year to employ not fewer than three men for every eighty acres of land in mining thereupon. A breach of any of these conditions renders the lease liable to forfeiture.

The Commissioner of Crown Lands may, on the payment of a fee of twenty shillings, grant a licence for twelve months to any person to search for and remove from any Crown lands any metals and minerals, except gold, for samples and analysis only; the quantity not to exceed one ton. The licensee may choose eighty acres on which to work for the period named, and remove without restriction any metals and minerals except gold, and he will have a preferential right to a lease of the ground at any time during the currency of the licence.

For gold mining, smaller blocks of land are allowed, and a "prospector" or miner may go, not only on land leased by pastoral tenants, but on land held under mineral leases granted for the purpose of mining for the baser metals; gold-miners' rights, in force for twelve months, are granted for five shillings, and authorise the holder to raise gold and reside on any waste lands of the Crown,

holding to his own use a small block of land, of which the area is prescribed by regulations. A special prospecting licence secures larger area of ground, of which the proprietor has a right to a lease. The area included in any gold mining lease must not exceed forty acres. By regulations the lessees are required to keep men employed on the ground leased, and a lease or "claim" may be forfeited if abandoned or not worked. Under special circumstances, permission to suspend operations may be obtained.

The Governor may grant to any person or company a fifteen years' lease, at a peppercorn rent, of Crown lands not included in any pastoral or mineral lease, "for the purpose of mining, sinking, boring for and obtaining coal, petroleum, or other mineral oil;" and the lessee has a right of purchase at any time during the last thirteen years at £1 per acre. Should neither coal nor oil be found within the first two years, the land absolutely reverts to the Crown. The discovery of coal on the land included in one of these leases would not entitle the lessee to any special reward offered for the discovery of a payable coalfield.

CHAPTER XV.

TRADE AND REVENUE—MANUFACTURES.

Trade and Revenue—Imports and Exports—Breadstuffs—Wool—Minerals—Other
Exports—Manufactures—Tariff—Shipping.

THE trade of South Australia is wonderfully large in proportion to the population. In 1881 the imports amounted to £5,224,063, or about £17 per head; and the following year to £6,707,708, equal to about £22 per head. The exports were about £15 per head in the former year, and about £18 in the latter. The staple exports, the produce of the colony, amounted to £3,463,402 in 1881, and £4,187,840 in 1882. The trade, especially in exports, has fallen off, owing to several consecutive bad harvests. In 1880 the exports amounted in value to £5,574,405, or £20 6s. 8d. per head. The imports in all the years mentioned were in excess of the exports; but while bad seasons are mainly accountable for this fact, it is also in some considerable degree owing to the large importation of material for the railways, waterworks, and other public undertakings. From the year 1856 to 1877, inclusive, with the exception of the year 1858, the exports were in excess of the imports, in several years the excess being more than £1,000,000, and in one year more than £1,500,000. The imports no less than the exports are the sign if not the cause of prosperity, for the more prosperous the people, to the greater extent will they purchase articles of comfort or luxury, not of home production, or which can be bought more cheaply or of better quality from abroad.

The staple produce exported amounted in value, according to official statistics, to £3,363,625 in 1881; it was over £4,000,000 in 1882. In the former year the breadstuffs contributed £1,336,761, wool £1,606,306, and copper £420,558. From 1846 to 1852 the export of minerals exceeded in value those of the breadstuffs and wool combined; but the Victorian diggings gave such an impetus

to farming that wheat and flour took the lead, wool coming next, and minerals a short way behind wool. In 1852, the year when most of the male population had gone to Victoria, most of the copper ore and metal on hand was shipped, bringing the mineral exports to £374,778, the highest amount reached up to that period; the breadstuffs, which in the previous year amounted to £73,359, rose to £212,566, and these figures do not include considerable quantities of flour taken overland. The wool exports were to the value of £115,036. In 1854 mineral exports had sunk to £94,831; the wool shipments were worth £182,020, and the wheat and flour shipments had risen to £316,217. In 1857 mineral exports were worth £458,839, the highest figure before the discovery of the Wallaroo and Moonta mines; breadstuffs £755,840, and wool £504,863. The mines first mentioned were discovered in 1860 and 1861, and in 1866 the largest export of minerals ever recorded took place—£824,501; the value of the wool sent out of the colony in the same year was £990,482. The harvest of that year was poor, owing to a rainfall of only 14·75 inches, so that exports of breadstuffs were worth only £645,401, about half the value of the preceding year.

In 1869 the Strangways' Land Act was passed. The rainfall in that year was under fourteen inches, and the exports of breadstuffs consequently in 1870 dropped to £470,828; next year it was nearly three times that amount. In 1871 there was a rainfall of twenty-three inches; but red rust injured the crops, and the exports decreased to £860,202; they nearly doubled this sum next year, with the rainfall only a fraction of an inch greater than that which brought on the previous harvest. There was a greater area of land under cultivation, but this increase would only account for a small portion of the increase in exports. The following figures show the comparison between the two harvests:—Season 1871-2, acres under wheat, 692,508; produce, 3,967,069 bush.; average per acre, 4 bush. 20 lbs.; price per bushel, 5s. 6d. Season 1872-3, under wheat, 759,811 acres; produce, 8,735,912 bush.; average per acre, 11 bush. 30 lbs.; price, 5s. 5d. The next harvest yielded nearly 8 bush. per acre, that of 1874-5, $11\frac{3}{4}$ bush.; 1875-6, 11 bush. 57 lbs.; next year there was a fall to 5 bush. 24 lbs.; 1877-8, the yield was 7 bush. 46 lbs; 1878-9, 7 bush. 9 lbs.; 1879-80, 9 bush. 47 lbs.

The last three years the average has been brought below five bushels. It must be remembered that latterly the farmers have been pushing out into country where the rainfall is less abundant and far less certain than in the older settled districts; and these lands in the very dry country pull down the harvest average very greatly, though in a good year they will give fine crops. Probably this harvest will give an average of ten bushels to the acre, in which case our surplus of breadstuffs for export will amount to between £2,500,000 and £3,000,000 in value. Our largest export of breadstuffs has been £2,469,720, in 1880; of wool, £2,010,843 in 1877; minerals, £824,501 in 1866.

Other exports, altogether, are not yet very large; but there is every reason to expect they will be greatly increased, as they include articles which can be produced in unlimited quantities in the colony. The statistical summary of South Australia gives the erroneous idea that they amount to *nil*; for the only articles of staple produce it mentions, or includes in the total, are wheat, flour, wool, and minerals, whereas South Australia exports wine, tallow, fruits, jams, live stock, chaffed hay, bran, and other items.

South Australian manufactures are naturally confined, pretty nearly, to articles for home consumption; but they have made considerable progress, and articles for which the colony long relied solely on importations are now made within its borders. In this last category may be mentioned bricks and pipes for deep drainage operations. Some splendid marble quarries have recently been opened at Kapunda, and will furnish an inexhaustible supply of stone for ornamental architecture, and not improbably will find markets abroad. About Victor Harbor there is granite enough to last for ages, if all the building in Australia were carried on with this rock exclusively. At that port, Granite Island, as its name indicates, is composed principally of this stone, which could therefore be shipped at a minimum of cost.

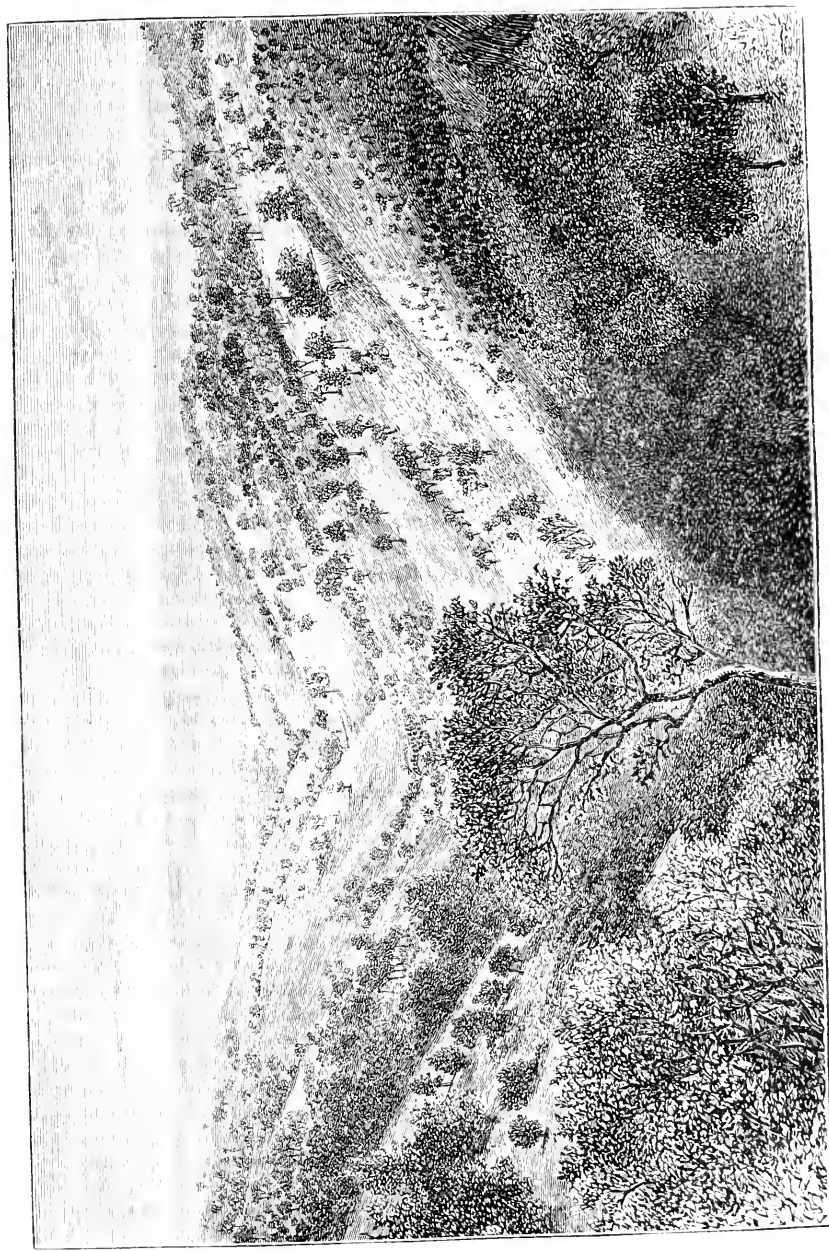
The woollen industry, which flourishes at Sydney and in Victoria, is about being started in South Australia, a factory having been established at Lobethal, a picturesque village in the hills, about twenty miles from Adelaide. This is the second attempt; but in the first instance the appliances were inferior, and the management not all that it should have been. Of course South Australians cannot expect to become large exporters of

manufactures for a long time to come. In young countries the price of labor, independently of the difficulties attending the establishment of industries requiring a great amount of skill and experience, and a large capital, restricts the enterprise of the country very much to the raising and export of raw material, and supplies of and luxuries for the table; other interests follow as changing circumstances permit. That there is a considerable amount of skill among the mechanics and artisans of the colony is shown by the horse vehicles and railway carriages, farming machinery and implements manufactured, and by the work involved in the buildings, public and private, constantly being erected. Excellent work is turned out of the iron foundries of Adelaide, Gawler, and Port Adelaide; and creditable specimens of naval architecture are yearly turned off the slips at the Port. In the artistic productions of the goldsmith, the silversmith, and the jeweller, Adelaide exhibits have won honorable mention at various Exhibitions, European and Australian.

The tariff is only slightly protective. There are fixed duties on some articles, and *ad valorem* duties of 5 and 10 per cent. on others. Spirits pay 12s. per gallon proof; sparkling wines 10s., and other wines 5s.; beer, 9d. per gallon; tobacco, 2s. per lb. manufactured, and in leaf 1s.; cigars and snuff, 5s.; sugar, 3s. per cwt.; tea, 6d. The only excise duty is on colonial spirits, which pay 8s. per gallon, so that they are protected to the extent of 4s. per gallon. The protected articles are those which are, or it is supposed can be, produced in the colony. The revenue for 1882-3 amounted to £2,170,315, including proceeds of land sales. Of the total revenue, taxation yielded £675,902 1s. 4d.; services rendered, *i.e.*, railways, postal department, marine dues, education, the telegraphs, waterworks, licences, &c., £749,506; fines, fees, and forfeitures, £52,890; land sales, £365,793; rents, &c., £100,737; business licences, £27,658; reimbursements, interest and exchange, and miscellaneous receipts make up the balance. Of the amount received from taxation, only £17,175 16s. represents direct taxes, and these are the probate and succession duties. In 1838 the revenue amounted to £1,448; in 1864 to £775,838; in 1866, owing to the system of forcing land into the market, it reached £1,089,129, and this amount was not reached again till just ten years later, when the figures were £1,143,312.

In some years the expenditure has exceeded the outlay, and in others has been kept within it. There was a surplus for each of the financial years 1880-81 and 1881-2, and a deficit at the end of the financial year ended June 30th, 1883; but this deficit was caused by changes in the land system and concessions, on account of bad harvests, to the farmers who had purchased land on credit from the Government. The taxation per head of the population in 1881 was £1 18s. 7d., the lowest rate of any of the Australasian colonies. Of course this is independent of local taxation for municipal and district council purposes. The public debt amounts to £12,453,400, making about £41 13s. per head of the population. Three-fourths of this is invested in public works returning a direct revenue.

This chapter should not conclude without reference to the shipping trade. The number of ships inwards and outwards in 1836 was nine, with a total tonnage of 2,592; in 1881 the number was 2,153, and the tonnage 1,269,491. In that year seventy-three steamers with a tonnage of 6,564, and 217 sailing vessels with a tonnage of 23,367, belonged to Port Adelaide. Three vessels were built with a total tonnage of 112. Larger craft are sometimes constructed at the Port. In 1876 there were twenty launched with a total tonnage of 2,053.



The Waterfall Gully, near Adelaide.

CHAPTER XVI.

THE RAINFALL—CLIMATE—SCENERY—SOUTH AUSTRALIA
AS A SANITARIUM.

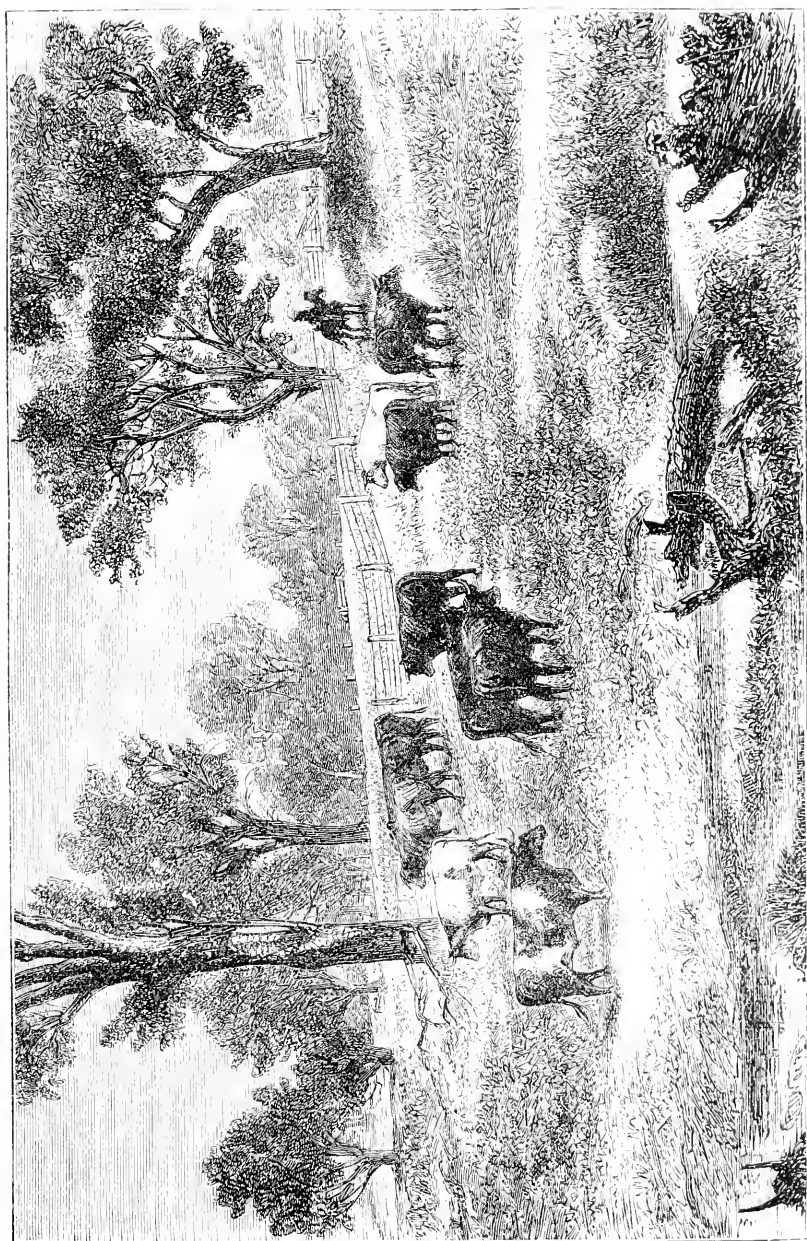
The Rainfall—Climate—Effects on agricultural and pastoral interests—Port Elliot—The Hills—Guichen Bay—Kangaroo Island—Port Lincoln—Scenery—Pichi Richi Pass—Mount Gambier and the Blue Lake—South Australia as a Sanitarium.

FIVE or six more inches rain a year, it is commonly observed, would enormously increase the productive capabilities of South Australia; and the meteorological records of the colony, studied in connection with the harvest returns, the shipments of wool, and the price of beef and mutton, show how much and how closely our leading interests depend upon the pluvial supply. The wiser course, however, is not to perpetually find fault with the climate, but having ascertained what products and industries are most suited to it, to turn attention especially to them as most likely to afford the greater return for capital, skill, and labor. The average annual rainfall in Adelaide from 1839 to 1880, inclusive, was 21·338. For more than forty years the record was kept by the late Sir George Kingston; for about a quarter of a century it has been kept at the West-terrace Observatory, under the direction of Mr. Charles Todd, C.M.G., Government Astronomer, Superintendent of Telegraphs, and Postmaster-General. At every telegraph station throughout the colony a gauge is also kept, and thus the difference between different localities in the amount of moisture with which they are favored is constantly under notice, and ought to serve as a guide where fair harvests may be expected to reward the agriculturist, and where the cultivation of cereals can only be expected to result in disappointment. According to Sir George Kingston's record, the heaviest rainfall was in 1875, when 31·45 inches fell. Next comes 1851 with 30·63 inches; in 1847, 1852,

and 1853, the fall was over 27 inches. The lowest register was 13·43 inches in 1876; in 1869, 13·85 inches was the record; in 1859 and 1865, less than fifteen inches fell. In 1882 the fall was under 16 inches.

These figures relate to Adelaide. In the hill districts the fall is much heavier. At Mount Lofty it is fully twice that of Adelaide. In the far north, especially in the plain country, the rainfall is lighter and more uncertain. In much of the squatting country about 8 inches is the ordinary annual supply, and occasional dry years occur when even this moderate allowance is withheld. About two hundred miles north from Adelaide this dry region commences, and forms a wide belt between the fertile agricultural and the best pastoral lands in the southern portions of the province, and that portion where the tropical rains are more or less experienced. Along the west coast, from Streaky Bay towards Eucla, which is just on the Western Australian side of the border, the rains are light, from seven to ten inches being the ordinary supply. The pasture is good, and after the rains the live stock in the north and west fatten very rapidly. Wheat growing in such a country is out of the question.

As a rule it may be said that, not including exceptionally wet portions of the hill districts, there is never too much rain in South Australia either for pastoral or agricultural purposes; unless some special foe to the farmer appears—in the shape of red rust in the spring, as the crops are coming to maturity, or storms or violent winds in reaping time—the yield of wheat is proportioned to the rainfall; the wettest season is followed by the heaviest crop. The result depends somewhat upon the distribution of the rain over the different months. In the squatting country of the north the rains come in the fall and the spring of the year, in March or April, and in September or October; the winter months intervening are generally dry. Farming under such conditions would be impossible. If heavy rains come to the end of June, and July is dry, the harvest prospects are doubtful; if July and August are dry a failure of the crops is certain. After a fair supply of rain up to September, should that month be quite dry, the farmers have cause for anxiety. In September of 1882, hot winds blew for several days, a most unusual thing for that period of the year, and by this means the wheat yield was diminished by three or four bushels.



Group of Cattle, Angaston.

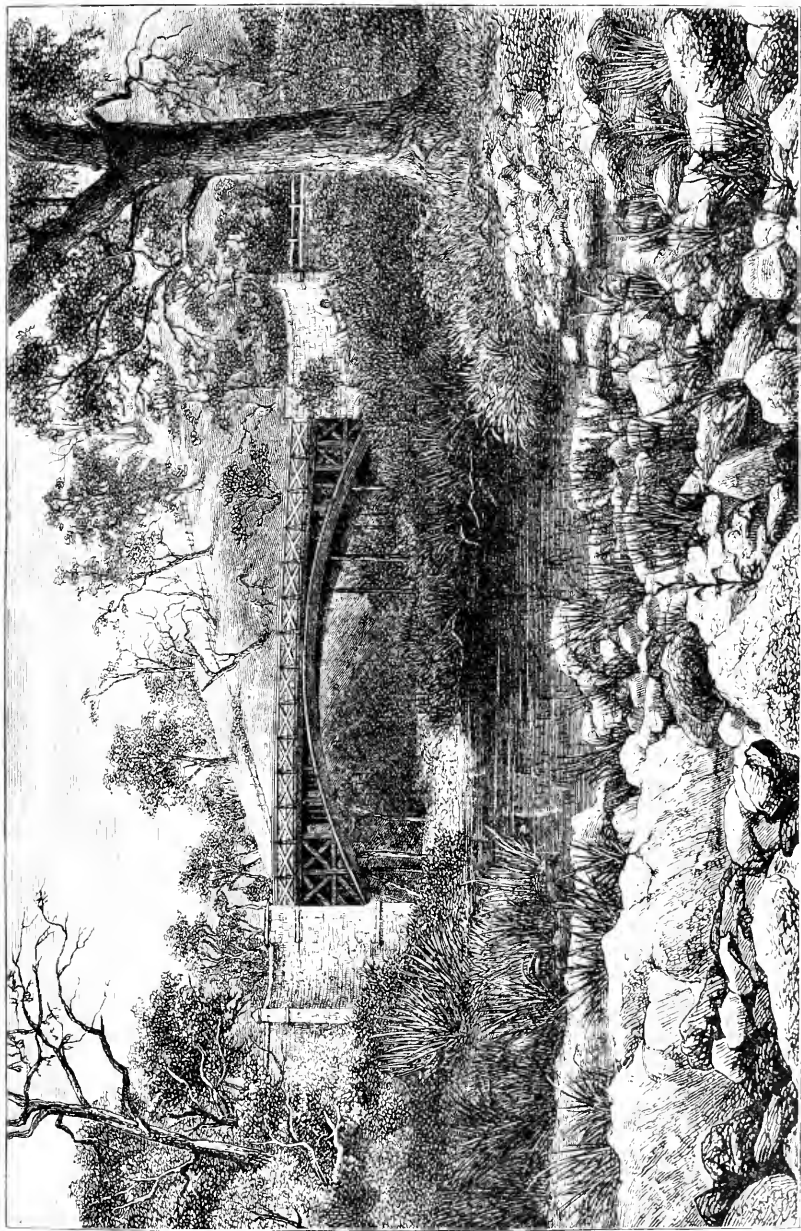
It is suggestive of the climate that drainage of farm lands is not only not practised, but carefully avoided, except in the south-east, where a large area of country has been and more is being reclaimed from a condition of swamp. In New South Wales, orangeries are drained; in South Australia they are irrigated. With her rainfall, however, South Australia produces heavy crops wherever farming is conducted on a proper system. The virgin soil in some parts of the colony produced from twenty to thirty bushels of wheat per acre, and forty to fifty of barley. What can be done with proper farming has been shown by Professor Custance in his experiments at Roseworthy. The climate is better suited than a moist one would be to the vine, the olive, and to other fruit-bearing trees and plants. Whenever from drought the grape crop is light, the quality of the must is better.

The temperature of South Australia is a subject upon which there has been much misconception among persons who derive their ideas from the casual statements of visitors. It has been said that Adelaide is the hottest city in the world, and the thermometer does occasionally record a degree not to be exceeded anywhere. As high as 116° Fahrenheit, in the shade, has been reached; but this has been the highest, and a very rare record. It must be borne in mind, too, that the dryness of the atmosphere renders the heat more endurable than it is in a tropical or any moist climate. A temperature of 100° in Adelaide is not near so oppressive as 80° is in Calcutta, or even in London. Then there is the consolation that the heat is not continuous, even in the summer months. Leaving out exceptional years like 1872 and 1880 when the extreme heat lasted for several weeks at a stretch, it may be said that as a rule the limit of the hot spells when the mercury is above 90° at noon is ten days, and in some summers they do not last more than five or three days. Then the wind goes round to the south, and there comes a refreshing change, with the thermometer falling twenty or thirty degrees, and sometimes more.

It is said there are four hot months in South Australia, the climate for the remaining eight being perfection. But of the four months, December, January, February and March, the extremely hot days—when, as Sydney Smith says, it would be a relief to take off your flesh and sit in your bones—do not, all added together in an ordinary year, make up more than a month. In the hot season

Adelaideans can find much cooler spots than the metropolis or the surrounding plains. At the Government House on Marble Hill, the thermometer in the hottest days does not rise above 70° indoors. Mount Lofty is naturally cool, but there are gullies not far from the Mount where grapes will not ripen for want of sufficient warmth. In some winters snow is seen in the Mount Lofty range, but it has never been seen in Adelaide, and only once has it been visible from the city; that was in 1841, when it covered the eastern slope of part of the range. In the north, beyond the Burra, snow has been seen, the high elevation of the country there accounting for the comparative coldness of the winters. Last winter there was a fall of snow at Terowie, and snow was also visible from Jamestown, both these places being in the north. The most favorite place of resort for those who can afford to leave their usual residences in summer time is Port Elliot. Though this watering place, on the shores of Encounter Bay, is only sixty miles from Adelaide, the change of climate experienced in leaving one for the other is very great. Even when days are warm at Port Elliot the nights are very pleasant, like the evenings in the temperate latitudes of Europe. Summer visitors stay from two to three months there. Many people are as contented to stay in the hills in the hot season, in such places as Mount Barker, or even nearer to the city. All along the coast to the south-east the climate is particularly temperate, even in January and February. Guichen Bay may be specially mentioned as a spot where the summer is rarely oppressive, and the nights agreeable and chilly enough to make a couple of blankets necessary.

Kangaroo Island is likely to be a place of summer resort largely patronised some day, as swept by the ocean breezes from the west and south, while even the dreaded north winds before reaching it must pass over a considerable expanse of water, it cannot but be cooler than it generally is on the mainland. There is a little shooting to be obtained on the island, and good fishing around it, and in the American River, a salt arm of the sea which nearly divides the island in two. The scenery viewed in sailing up this river is varied and attractive, and perpetually changing. The banks are clothed with stunted timber; the stream is constantly altering in width and form; the stream, now winding then stretching out in long straight reaches, suddenly expands into large lagoons, studded



Gumeracha Bridge.

with picturesque islets, and then narrows again till the yachtsman finds himself within two or three miles of the opposite side of the island to that at which he entered. Cygnet river is a fresh-water stream on another part of the island, and of sufficient depth and width to allow of boating for miles were some of the timber that obstructs the passage cleared away. There is rich farming land along this river. The island is much better watered than is commonly supposed.

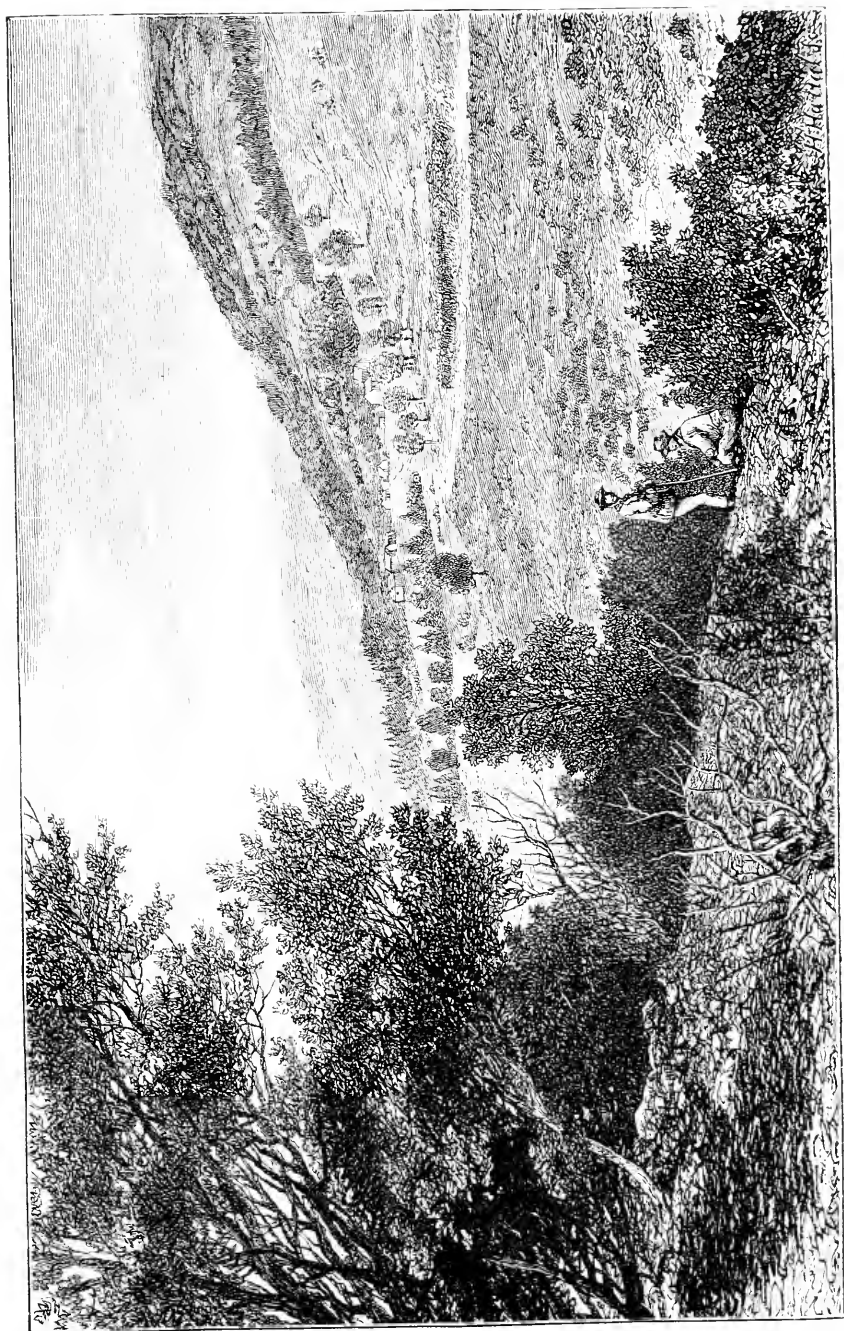
Port Lincoln is much in favor for pleasure excursions. From the character of the surrounding country there is little trade there, though the harbor, which could accommodate the British navy, is one of the finest in the world, and is classed with Port Jackson, Cork, and St. Jago. The coast and islands leave an indelible impression upon the memories of all visitors who have any taste for the grand and the beautiful. Here in yachting, fishing, and visiting the various points of interest about the harbor and neighbouring country, and among the islets, a very enjoyable month or two may be spent.

It is sometimes said that Australian scenery is monotonous, and doubtless one might ride for many days about some portions of the continent only to be confirmed in this opinion; but the same thing might correctly be said of most countries. Of late years the paintings of that now eminent artist, Mr. Johnston, have done much to remove any impression that may have existed that New Holland is open to the reproach of everlasting sameness. It cannot deserve such a description as far as the settled portions of the continent are concerned. It has its woodland and open pasture, hill and dale, mountain ranges and wide stretching plains, lake and river and rivulets innumerable; timber and herbage varying with different climatic conditions and different soils—all, in short that is required to give a rich variety of prospect. In South Australia there certainly is a vast amount of dreary-looking country, but there is a very great extent that it is pleasant to travel over. All through the ranges that sweep round the Adelaide plains, from north to south-west, the scenery is attractive. Anyone may travel from thirty to fifty or sixty miles in any direction from Adelaide through the Mount Lofty and Barossa ranges without seeing any country that is not pleasant for the eye to look upon. In the north there is Mount Remarkable, with its fertile and pretty

country about it, and a glorious view from its summit. After leaving Port Augusta by rail for Farina, within about fifteen miles the train goes through Pichi Richi Pass, and some rugged mountainous country—affording grand views, in which precipitous heights, strange rock formations, and magnificent gorges form the striking features, which are at times relieved by the prospect of green slopes and rich open valleys. In a previous chapter, Mount Gambier and the Blue Lake have been referred to. Southward, across smiling cornfields and fat pastures, is Mount Schanck, about which is the bed of an extinct volcano, now overgrown with grass and shrubs and small timber, among which the smaller marsupials gambol and afford game for the sportsman. Generally speaking, there is a deficiency of water scenery, but the king of Australian rivers flows through the province, and the lakes Alexandrina and Albert are of considerable extent, and abounding with fish and game. The land around these lakes is almost all used for pastoral purposes; the greater portion is freehold, and most of the wealthy proprietors dwell there in good houses, either the whole year or in the summer months. The heights of the principal mountains in the colony are:—Mount Lofty, 2,334ft.; Mount Barker, 2,331ft.; Mount Bryan, 3,012ft.; the Razorback, 2,922ft.; Black Rock Hill, 2,750ft.

Australian country presents very different aspects at different seasons of the year. The trees are always green, but in the summer months the grass looks brown and parched. After the first rains the whole face of nature seems to be changed, and emerald verdure meets the eye on hill and plain. The best time to view the land is in October, when the corn is about its full height, and there is no sign as yet of the russet brown of autumn in the fields and pastures.

South Australia is a sanitarium alike for the delicate patient of old England, whose constitution cannot bear the east wind—which, notwithstanding all his admiration for it, killed Charles Kingsley—and for the soldier whose liver is disordered by a long residence in tropical climates. How far the atmosphere is a cure for consumption, or at what stage that disorder may be arrested by the sufferer seeking relief in the genial climate of the colony, are questions upon which medical men are hardly agreed; but it is very certain that persons who thirty years ago left the United



Oullina Gap, near Adelaide.

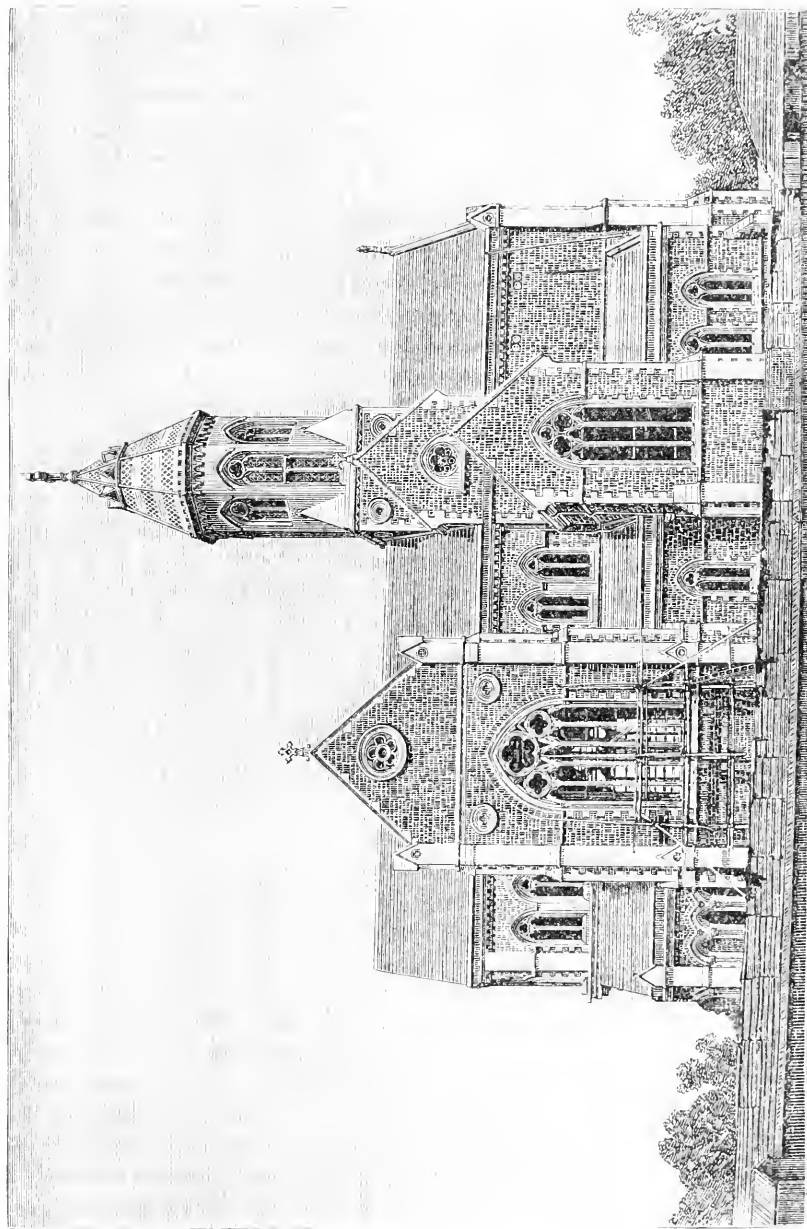
Kingdom suffering from this malady, and with the assurance that they had not long to live, are now in the enjoyment of good health, with apparently years of useful existence before them. Professional men whose health, or that of some member of their family, has broken down, have experienced the curative effects of this southern climate, and have at the same time been able to establish themselves in their own profession, which would have been difficult, if not impossible in Italy, or any other foreign country. The colony is within easy reach of India, and those Indians who seek in South Australia to recruit their health and energies, and recover from the enervating effects of years of moist heat, are not disappointed. There is everything to facilitate recovery. Railways, steamboats, and coaches are available, and make it easy to see a great deal of the country in a very brief period. The sport to be obtained Indians might be inclined to despise, and yet, if unexciting, there would be novelty in kangaroo hunting and wallaby shooting; and in some seasons the Murray, the lakes, and the Coorong are swarming with wild fowl, while the wild turkeys afford excellent sport for the rifle. In the early days quail swarmed all over the settled districts, but now they are scarce, and very rarely afford a day's shooting. Anyone, sportsman or not, can spend a few months very pleasantly in the colony, where rural amusements are always plentiful, while the bright sky and clear atmosphere, and, if wished for, constant change of scene make the mere consciousness of existence a pleasure.

CHAPTER XVII.

RELIGION AND EDUCATION.

The original voluntaryism of religious bodies—The first clergymen—The grants-in-aid in 1846—Their abolition in 1851—The first Anglican Bishop—The Catholics—The Wesleyans—The Presbyterians—Other religious bodies—The Lutherans—Progress—The system of State Education—The Education Act of 1875—Working of the system—Statistics.

THE colony of South Australia was founded upon the voluntary principle, the only exception being the appointment of a Colonial Chaplain of the Church of England. This appointment was given to the Rev. C. B. Howard, who arrived in the colony with Captain Hindmarsh, the first Governor, in 1836. He was respected and beloved as a laborious pastor, a good colonist, and a simple-minded amiable gentleman. In the following year the Rev. T. Q. Stow, a member of the Congregational denomination, arrived. He was at once recognised as an eloquent earnest preacher, and by his character and talent he exercised a great influence in the community for many years. In 1838 the Rev. William Longbottom, a Wesleyan minister, on his way from Hobart Town to Western Australia, was, with his wife and only son, wrecked on the southern coast of South Australia, and after many hardships and perils, arrived safe in Adelaide, having been well treated by a tribe of natives that afterwards, in Colonel Gawler's time, massacred the crew and passengers of another vessel, a crime for which the ring-leaders were tried by martial law and executed. The Wesleyans had formed a congregation and their religious services were conducted by laymen. Mr. Longbottom was warmly welcomed and remained in the colony. In the same year Pastor Kavel (Lutheran) arrived with German immigrants, who had left their native homes on account of the religious persecution to which they had been subjected for clinging to the old form of Lutheranism instead of joining what was called the Reformed Church. The Rev. Ridg-



St. Peter's Cathedral, North Adelaide.

way William Newland, Congregational, also arrived in 1838, and settled at Encounter Bay, where for nearly forty years he preached without any earthly reward beyond the esteem of his neighbors, the gratitude of his own congregation, and the approval of his own conscience. The Rev. Ralph Drummond, a worthy divine of the old John Knox stamp, of the United Presbyterian persuasion, reached the colony in 1839; the Rev. Robert Haining of the Church of Scotland a year or two later. All the Presbyterian bodies have long ago amalgamated under the name of the Presbyterian Church of South Australia, with the exception of the Free Presbyterian Church, founded in the colony twenty-five years ago, more or less, and one congregation in the country which still sticks to the Old Kirk.

Dr. Ullathorne was the first Roman Catholic clergyman who arrived in the colony. He came from Sydney in the year 1840, on a missionary visit, preached in Adelaide and at country settlements, organised the Catholic body, and after a few months returned to New South Wales. The Rev. Mr. Benson was appointed as priest, and arrived early in the following year. All these pioneer ministers of religion have passed away, and while engaged in their ministrations in the colony they were joined by other clergymen of their own and other persuasions, their numbers increasing with the progress of the colony. In 1844, Dr. Murphy, the first Roman Catholic Bishop of Adelaide arrived, and the Anglicans welcomed their first Bishop, Dr. Short, three years later.

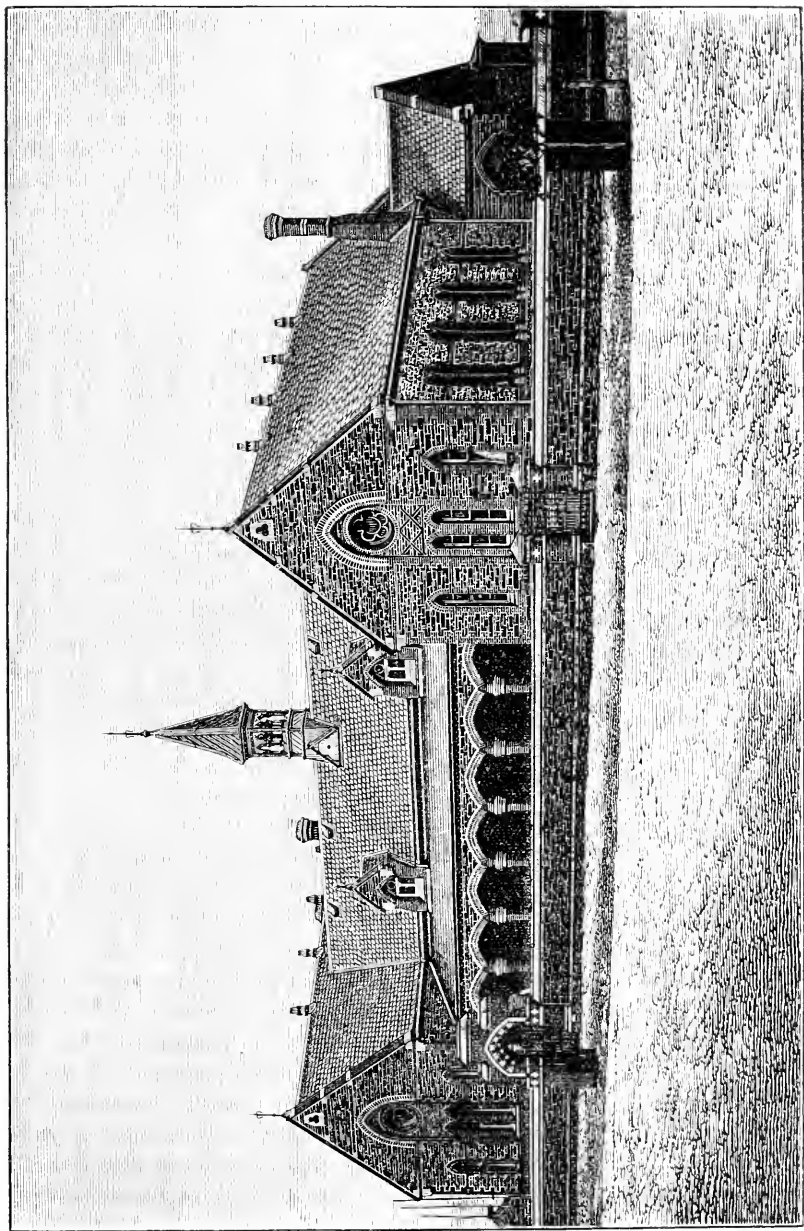
In the early days there was great harmony between the different religious denominations, and this was not disturbed till 1846, when state grants to religion were made, contrary to the popular will. At this time there were three Anglican clergymen besides the Bishop; several Catholic priests and their Bishop, several Wesleyan ministers, a clergyman of the Scotch Kirk, one United Presbyterian, three Congregational ministers, one or two of the Baptist persuasion, the Lutheran clergy, and some preachers of the lesser sects. The Congregationalists possessed great influence at this time, and were foremost in their opposition to the grants-in-aid, which were abolished in 1851, and with them disappeared all occasion for anything like sectarian strife. The voluntary system has worked well, and those who regret the severance of Church and State are few indeed. Under the able

management of the late Bishop, Dr. Short—who has retired on the score of ill-health, and lives full of years and honors in his native land—the Anglican See became very prosperous, and the missionary energy that of late years has been manifested by the Church of England in the old country is displayed in South Australia. The Wesleyans and Roman Catholics have also progressed wonderfully in the numbers of churches and church attendants. The growth has not been so great with other sects.

In 1881 there were sittings in churches or chapels for 163,242 persons—more than half the population. Of these sittings official returns credit the Wesleyan Methodists with 35,000 ; Church of England, 27,432 ; Roman Catholics, 20,000 ; Bible Christians, 16,835 ; Primitive Methodists, 16,799 ; Lutherans, 10,000 ; Congregationalists, 9,250 ; Baptists, 8,926 ; Presbyterian Church of South Australia, 6,250 ; Christian Brethren, Disciples, &c., 5,000 ; Church of Christ, 2,560 ; Christian Church, 1,670 ; other sects, under 1,000 sittings each. The total number of churches and chapels was 811. The average number of children attending Sunday Schools was 46,005, not including the Roman Catholics, from whom no returns have been received. The teachers numbered 5,488.

The State from the first gave aid to the education of the young, but as time went on it was found that the system administered was behind the age, and that in many of the schools the standard of teaching efficiency was not very high. In 1875 a new Education Act was passed ; a Council of Education, with an Inspector-General of Schools as President, replaced the old board ; the qualifications of teachers were tested by examination ; new schools were built all over the colony ; model schools were established ; the number of inspectors was increased. A Training College for teachers was founded as an essential part of the system. The Girls' Advanced School has no necessary connection with the system, but this academy pays its way, the fees being about the same as are paid for boys in private schools of the same class.

In 1878 the Council was abolished and the department was made directly responsible to the Minister of Education. The standard of the teachers is high, and at some of the State schools a pupil can learn enough to qualify himself for matriculation at the University or for a Civil Service examination. The road from



Model Schools, Adelaide.

the gutter, it is said, is open to any clever industrious boy right through the State schools to the University. Poor but ambitious scholars have the prizes and encouragement of bursaries and scholarships offered to them. But it is by the success with which the general work of imparting an English education to the bulk of the juvenile population is carried out that the system will be judged ; and, so far, the results show a great improvement upon those attained under the old order of things, though there may still be room for further amendment. The fees are 4d. per week for children under five years, and 6d. for pupils above that age. It is compulsory for parents to send their children to some school, and "visitors" are appointed to see that they do so. If the law is evaded or disobeyed, the "visitor" warns the offending parent or guardian ; and should he remain obdurate, there is a summons to a "School Board of Advice," by whom this summons is heard ; the offender is again warned. As a last resort there is a summons before a magistrate, who, if the case is proved, imposes a fine.

The education is secular ; but the head master of a school may, if he likes, and must if requested by ten parents of pupils, read a portion of the scriptures, without note or comment, for at least a quarter of an hour before the regular time for commencing school business.

In the year 1881 there were in the province 384 Government and 363 private schools. In the former there were 768, and in the latter 767 teachers. There were on the rolls 31,892 scholars at the Government, and 13,626 at the private schools. The attendance on a day on which the return was taken was 23,343 at the Government, and 12,528 at the private schools. The private schools are of varied quality, ranging from the old-fashioned dames' schools, where even the three R's are imperfectly taught, to the collegiate institutions in which the leading citizens and politicians of the future obtain the education which fits them for business and public life, and where not a few obtain the knowledge and training that enable them to acquit themselves with credit in the Universities of Cambridge, Edinburgh, Glasgow, Dublin, or London. The oldest of the high schools of the colony is St. Peter's Collegiate School, founded in 1848 by old colonists, some of whom, including prominently the late Dean Farrell, handsomely endowed it. It was established in connection with the Church of England, but from

the first was open to scholars of all denominations. The Prince Alfred College, established by the Wesleyans, but open to boys of all religious denominations, came into existence about sixteen years ago ; the foundation stone was laid by the Duke of Edinburgh in 1867. It is regarded as a rival to St. Peter's, and has outstripped the older seminary in the number of its scholars.

There are a number of other academies in which the higher branches of instruction, including the classics and mathematics, are taught, besides the usual subjects embraced in a sound commercial education. Young ladies' schools are numerous. In the mode and matter of the instruction imparted, some of these seminaries leave little to be desired ; but the high charges have driven many parents of moderate means to send their daughters to the Government Advanced School for Girls, where they are instructed, if desired, in languages, music, and all the usual branches of a young lady's education. This school has naturally excited some amount of jealousy, and it has been condemned as being outside the ordinary scope of a Government system of education. But when the State has undertaken the duty of caring for the instruction of the young, it is difficult to define exactly the point where that duty ends. The Advanced School for Girls supplied a great public want ; it costs the country nothing, and some girls pass from it into the Training College to prepare themselves for the duties of teaching in the Government schools.

The Adelaide University was founded about nine years ago. Some clergymen, who were endeavoring to start the Union College—open to all Protestant Trinitarian sects—for the training of candidates for the christian ministry, asked Mr. W. W. Hughes, the leading proprietor of the Wallaroo and Moonta mines and a Presbyterian, for a donation ; and when he offered them the munificent sum of £20,000, they suggested that this should be devoted to the founding of a University instead of a Union College, which, however, was afterwards established and still exists. Mr. Hughes consented, with the condition that he should nominate the two first professors. The Parliament liberally supported the scheme, endowing the University with 50,000 acres of land, besides granting a building site of five acres on North-terrace, and five per cent. annually from the public funds on all moneys contributed to the University. It was stipulated that there should be no religious

tests for students or professors, and that the Governor should appoint the first Council. Some time afterwards, the Hon. Thomas Elder, then a member of the Legislative Council, gave £20,000 for the same object without any conditions. The Hughes Professors were the Rev. John Davidson, appointed to the chair of English Language and Literature and Mental and Moral Philosophy; and the Rev. Henry Read, M.A., who filled the chair of Classics and Comparative Philology. The former of these gentlemen died two years ago, and Mr. Read had previously resigned. The Professors and lecturers now are D. F. Kelly, Esq., M.A., Hughes Professor of Classics; E. Vaughan Boulger, Esq., Hughes Professor of English Language and Literature and Mental and Moral Philosophy; Horace Lamb, Esq., M.A., Elder Professor of Mathematics; Ralph Tate, Esq., F.G.S., &c., &c., Elder Professor of Natural Science; Edward Charles Stirling, Esq., M.A., M.D., Lecturer in Physiology; William Barlow, Esq., B.A., Dean of the Faculty of Law; Walter Phillips, Esq., B.A., Lecturer on Laws. Assistant Lecturers, Aretas Young, Esq., B.A., on the Law of Real Property; and R. W. Moore, Esq., on the Law of Obligations. The examination of applicants for admission to the South Australian Bar has recently been handed over to the University. There are in the colony already graduates who have won coveted degrees in this new seat of learning. It admits female students. The University building already erected gives ample accommodation, and is but a portion of what, when completed, will be an architectural structure of which Adelaide may be proud. The Chief Justice is the Chancellor, and the Rev. Roby Fletcher, M.A., Vice-Chancellor.

The two gentlemen to whose munificence the colony owes its University have, since its foundation, both received from Her Majesty the honor of knighthood.

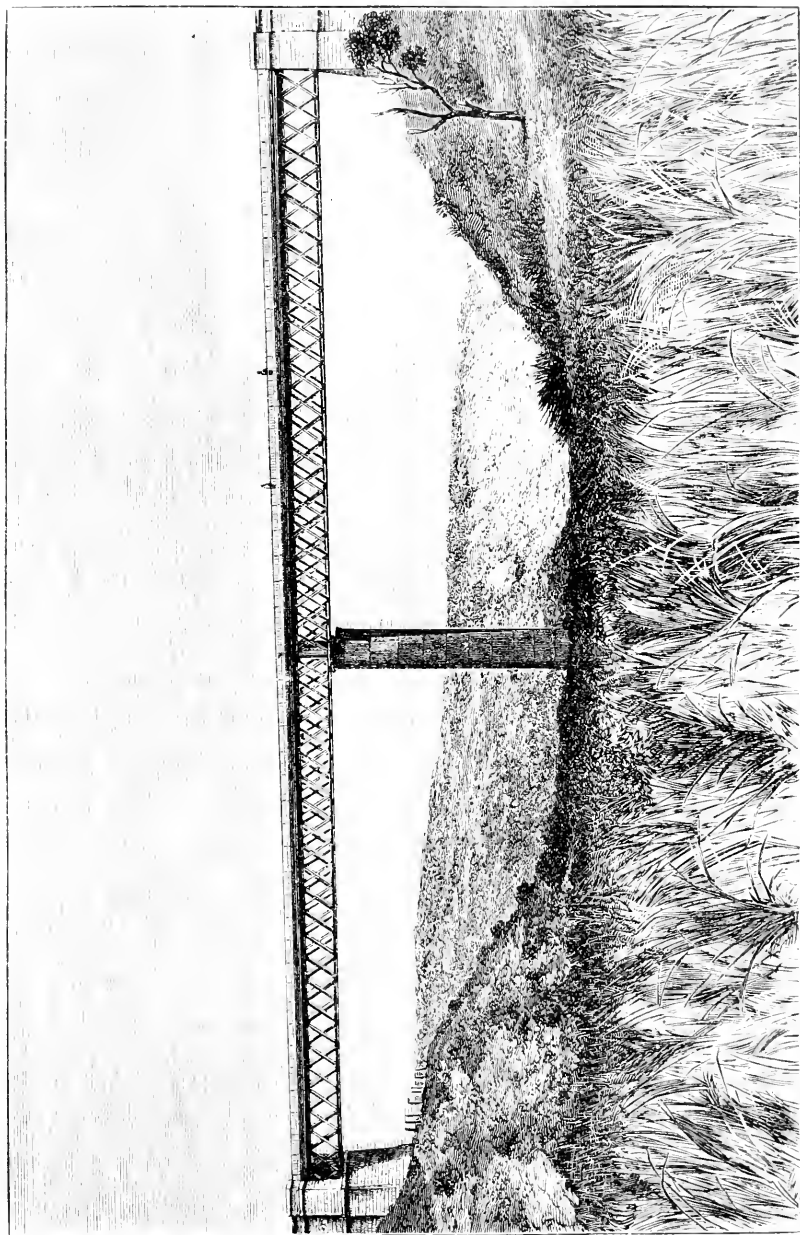
Recently a National Art Gallery has been erected in connection with the South Australian Institute, and space has been found for the Museum with its splendid collection of geological, botanical, and other specimens. Associated with the Institute are schools of painting and design, and private classes for instruction in languages and other subjects. Mr. H. B. Gill, one of the South Kensington masters, gives lessons in the School of Design, and Mr. Tannert holds classes in the School of Arts. Upwards of a hundred country Institutes receive support from the State.

CHAPTER XVIII.

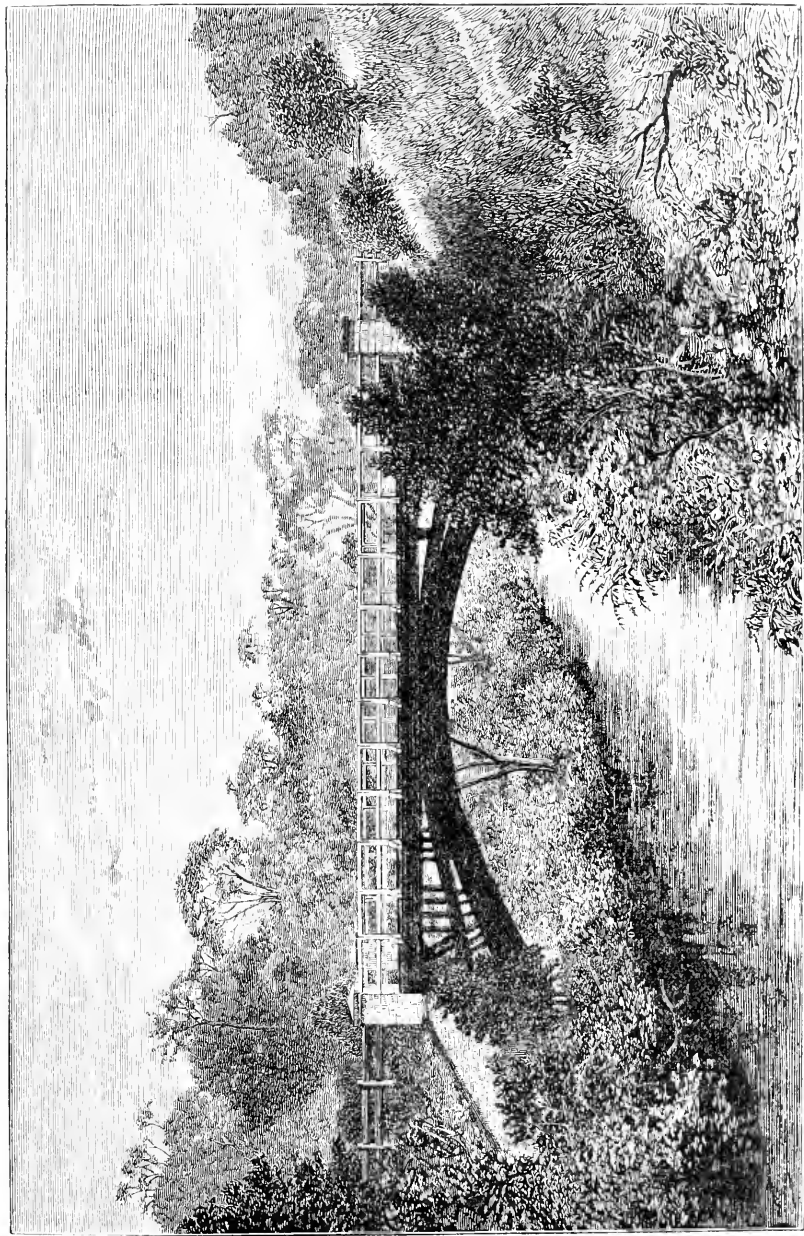
Public Works—Telegraphs—The first telegraph intercolonial lines—Railways—Roads—Bridges—Waterworks—Public buildings—Marine improvements—Deepening and improving outports—Jetties—Lighthouses.

THE great transcontinental telegraph of Australia has, more than almost anything else, brought South Australia into world-wide notice as a colony of astonishing enterprise, considering its youth and population. It is fitting therefore that in treating of the public works of the province, telegraphs should have a foremost place. The first line constructed in the colony was from Port Adelaide to the metropolis. It was a private line erected under the superintendence of Mr. James MacGeorge, and opened in November, 1855. The Government erected another line which was opened in January, 1856, and purchased the private one, which was afterwards pulled down. It was determined that all the telegraphs should be in the hands of the State, and Mr. Todd, who was engaged as Superintendent, arrived from England in 1855. Since then the erection and working of all the lines have been under his management. The overland telegraph to Victoria was completed in July 1858, the late Mr. Walter Thompson, one of the early settlers, being the contractor. There were on the 30th June, 1882, 5,130 $\frac{3}{4}$ miles of telegraph in the colony, and 6,748 $\frac{1}{4}$ miles of wire.

The construction of the line from Port Augusta to Port Darwin has been referred to at some length in a previous chapter. This great work cost a little over half a million pounds. Several years later the colony was connected by wire with Western Australia, at a cost of £218,530. The next work of special importance in this department was the laying of a cable from the mainland to Kangaroo Island, the object being that vessels may be signalled some eight hours earlier than had been practicable previous to that time. Besides the telegraphs there are forty-nine telephones, their total length of wire being 275 miles.



Hamley Railway Bridge,



Bridge over the Onkaparinga River, Clarendon

About 980 miles of railway are open ; about eighty miles are in course of construction, and lines having a total length of about 340 miles have been sanctioned by Parliament, and have yet to be commenced. By the time this book is through the press a Bill to authorise the construction of a railway from Port Darwin to Pine Creek, a distance of $148\frac{1}{2}$ miles will probably have passed through Parliament, having already been carried by the Assembly. On the 30th June, 1882, there were 945 miles open, and the average for the year ending on that date was $825\frac{3}{4}$ miles. The revenue was 2·57 per cent. on the cost of the line above working expenses, and towards the payment of interest over the capital cost of the lines. The receipts were largely diminished by the bad harvest. The total cost of the railways open on the 30th June, 1882, is £6,121,615, and the cost per mile, £7,411. Most of the lines are on flat or tolerably easy country, but the one in course of construction to the Victorian border, after the first three or four miles from Adelaide, passes for fifty miles through hilly country with deep cuttings, severe gradients, tunnels, gullies spanned by viaducts and heavy earth-works. The tunnels, the principal bridges, and the deepest cuttings are within twenty miles of Adelaide.

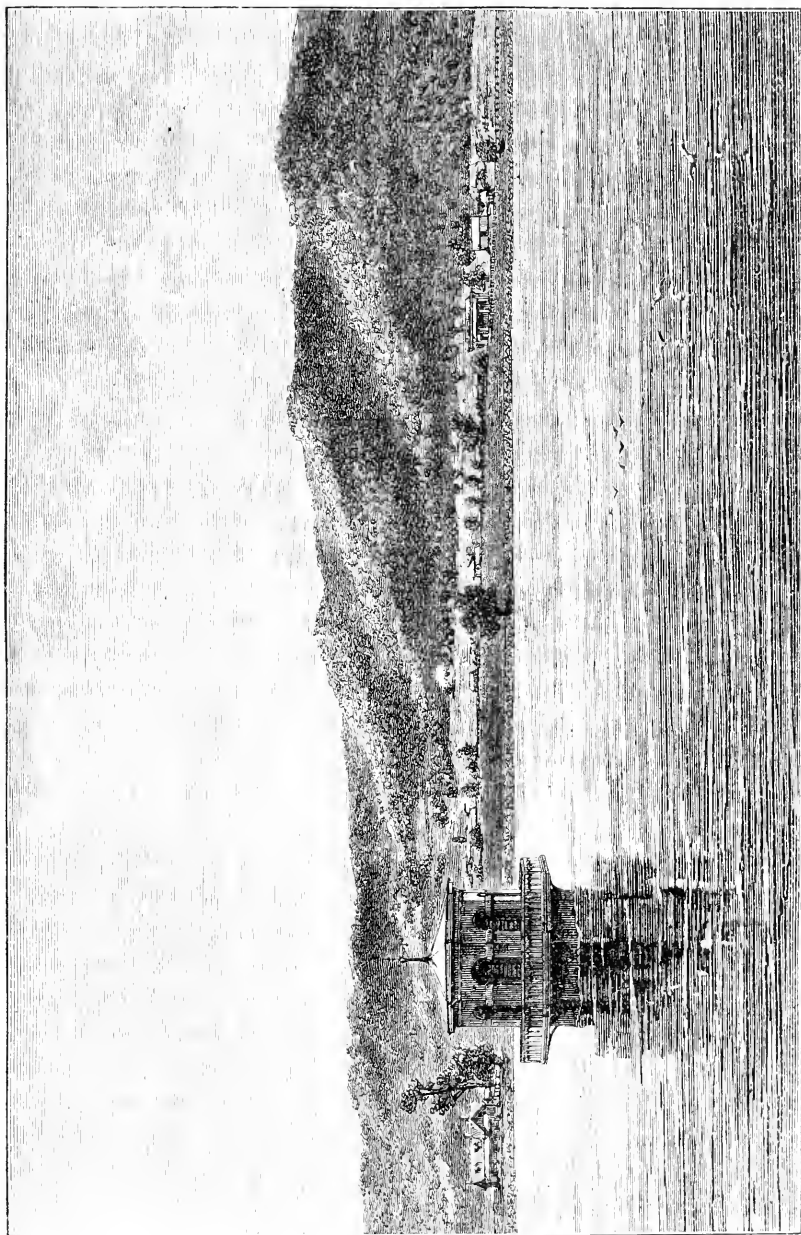
The roads of the colony are under three different systems of management. The corporations manage all the roads within their limits. The district councils construct and maintain the highways within their boundaries, except the trunk lines, or "main roads ;" these main roads are under the care of road boards, of which there are eight, each having an extensive district under its care. All the expenditure on main roads throughout the colony, and on all roads outside the limits of corporations and district councils, is paid for out of the general revenue. The expenditure on roads within the limits of corporations and district councils is paid for, half out of proceeds of rates, and the other half by a subsidy from the general revenue. "Main roads" can only be created so, as distinguished from district roads, by Act of Parliament, and as the change of a "district" road into a "main" road is a relief to the local rates, there is a constant effort by deputations and petitions to induce the Government and Parliament to increase the number of these conversions. Whatever may be thought of the system, economically considered, it has given South Australian highways which, for construction, smoothness, and durability cannot be sur-

passed in the world. Notwithstanding the thousand miles of railways, there is an immense amount of coaching in South Australia; and this mode of travelling, owing to the excellence of the roads, is most enjoyable, carrying back the memories of those who are far down in the vale of years to a period before South Australia was founded, when they liked nothing better in the old country than a box seat on a mail coach—listening, perhaps, to connoisseurs discussing with the driver the merits of the splendid “cattle” in front of them.

There are 1,692 miles of macadamized main roads, constructed at an average cost of £1,923 per mile. There are 1,916 miles proclaimed, but not yet made. The district councils have many miles of excellent roads, but having to come on the ratepayers for funds they work more economically than the road boards do, and only construct where really the natural surface needs meddling with. In the year ended June 30th, 1882, the corporations and district councils expended on roads and bridges £144,254, of which the Government contributed half.

The principal bridge in the colony is one spanning the Murray, over which the railway is to run. This is a splendid structure, which cost £130,000. Adelaide is well supplied with strong and handsome bridges over the Torrens; and many in various parts of the colony are a credit to the engineers who designed them and superintended their construction.

The waterworks have of late years become a very important branch of the public undertakings of the province. The Adelaide, Port, and Suburban waterworks had cost up to June 30th, 1883, £735,465 in actual expenditure, and for the financial year ended on that date yielded a revenue of 52 per cent. on cost of construction, after paying for working expenses. The reservoirs will hold 770,775,000 gallons—sufficient to supply 28 gallons per head per diem to 75,000 persons for twelve months. The amount expended on the city sewers up to June 30th, 1882, was £215,936, and the outlay has since been and still is going on. The water supply of various suburban places, unconnected with the reservoirs which furnish Adelaide with the pure element, had cost £77,025 19s. 8d. At more distant places, including Ports Pirie and Augusta and Mount Gambier, £172,715 had been expended. A number of little towns are being supplied at a cost of about £30,000. The



The Old Reservoir

sum of £1,265,970 has been invested in waterworks, independent of large amounts spent in well-sinking.

The expenditure on buildings is somewhat lavish, and some of the public structures have considerable architectural merits, while others appear to have been designed with rather a severe regard to utility. The school-houses, quarantine station, and new Government offices, built within the last few years, have cost close on £420,000; and to these must be added older undertakings, including the General Post Office, which cost £60,000, the Supreme Courthouse, and the buildings of an earlier date, among which must be mentioned the residences of the Governor in Adelaide and at Marble Hill, the old Treasury offices, the hospitals, gaols, lunatic asylums, and other structures.

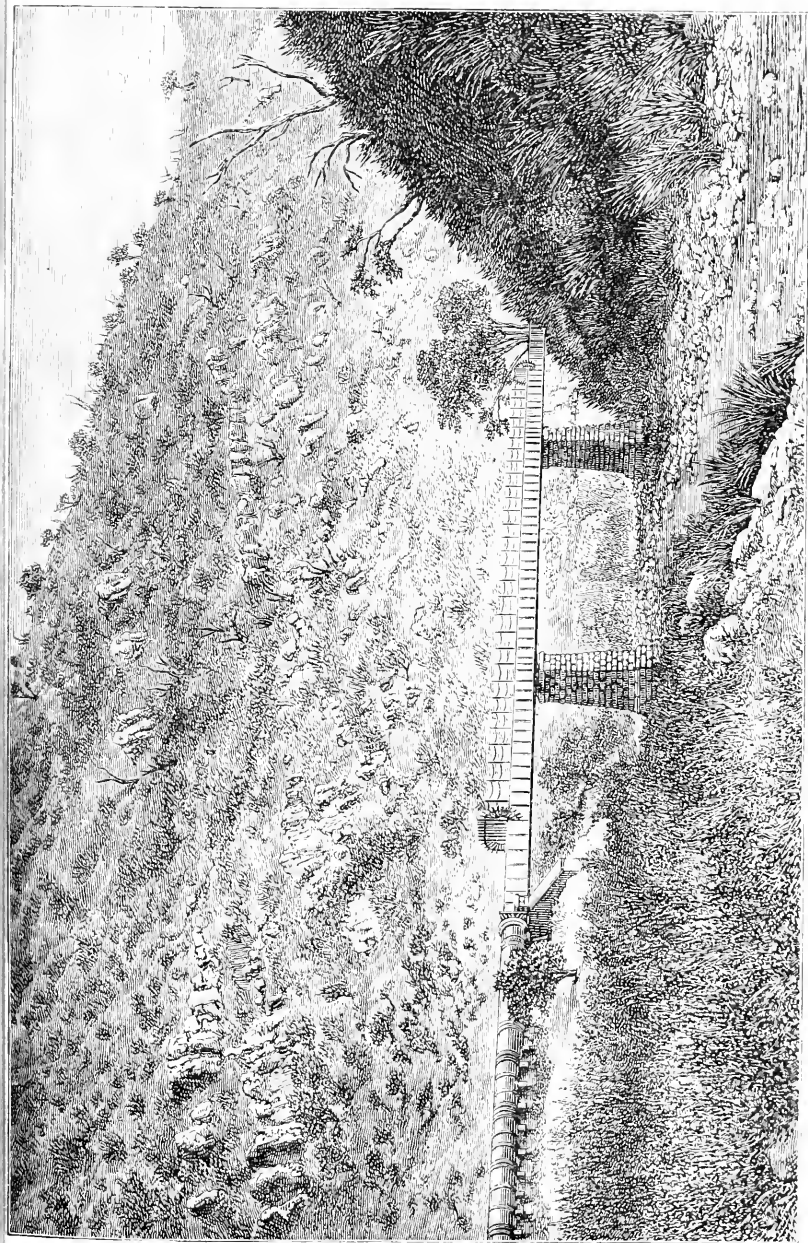
The harbor improvements at Port Adelaide had cost, at the end of 1882, £606,095, and the quantity of silt raised is 2,663,284, yards. There are two bars, the outer and the inner, which have caused most of the outlay. The former is composed of sand and shell, and the cutting through this, at the end of 1882, was 3,500ft. in length by 250ft. in width at bottom, the depth having been increased from 13½ft. to 20ft. at low water; the depth at high water is 28ft. The inner bar is composed of limestone and had at the date mentioned been removed for a length of 9,500ft. by a width of 150ft. at bottom, excepting for about an eighth of a mile, for which distance the width was 100ft., but the widening of this to the uniform width of 150ft. is nearly completed. The depth has been increased from 9½ft. to 18ft. at low water. There has been a great amount of dredging besides that effected at the bars. The Port channel, from the Lighthouse to the Commercial Wharf, is about nine miles in length, and the depth at low water ranges from 18ft. to 22ft., and at high water from 26ft. to 31ft. Deepening operations have been carried on ever since 1849. Out of two and a half miles of wharf frontage the Government possesses 2,413ft., and for nearly half this extent wharves have been constructed. The patent slips are in private hands. Fletcher's is capable of taking a vessel of 1,500 tons register; the others will take ships of from 400 to 700 tons.

The outports have not been neglected. At the close of 1882 there had been laid out at Port Augusta £14,590; at Port Pirie,

where more wheat is shipped than from any other port in the colony, £83,504; at Ports Wakefield and Broughton, £20,866; and about other outports and the River Murray, £22,628.

The jetties, of which there are a great number, have cost £63,540 of borrowed money, and a large amount taken from the revenue.

The coast and the islands near the mainland are admirably supplied with lighthouses, which number twenty-one, exclusive of gas beacons at the entrance to the Port Adelaide river. There are also three lights on the lakes. The lighthouses have cost between £200,000 and £300,000. The expense of their maintenance in 1881 was £7,443, and the amount received for light dues £8,411 19s. 3d. The lighting of the coast is now so perfect as to render navigation very safe, and of the few groundings that take place on South Australian shores, the causes are to be found in almost every instance in want of caution or grave errors of judgment on the part of the navigators. The shipping casualties of a serious character since the foundation of the colony have been very few, the most tragic being the wreck of the steamer *Admella*, in 1859, not far from Cape Northumberland, and of the sailing vessel *Geltnood* near Rivoli Bay, in 1876. Over eighty passengers and crew of the first-named vessel were lost; all hands perished on board the *Geltnood*. There was no lighthouse at Rivoli Bay at that time, but one was erected there soon after.



Aqueduct connecting Old and New Reservoirs.

CHAPTER XIX.

THE ABORIGINES.

Low mental capacity—Linguistic faculty—Humor—Comical blunders—Superior attractiveness of the wild to the half-civilised black—Origin—The Malays—Customs—Rites—The corroboree—Dying out of the race—Causes of mortality—Early conflicts between whites and blacks—Wreck of the *Maria*, and massacre of all the passengers and crew—The Rufus slaughter—Port Lincoln atrocities—Executions—Peace—Native battles—Weapons and implements—The finest and puniest tribes—Half-castes—Superstitions and beliefs—Statistics—Mission stations.

NOTWITHSTANDING some varieties of custom and great differences of dialect, and diversities of form and stature, the aborigines of New Holland have common physical and mental characteristics. Their perceptions up to a certain degree are lively, but their intelligence is of a very low order. Their arithmetical knowledge is limited by the number of their fingers; in fact it is a disputed point whether it extends so far. Missionaries and other persons who have taken much interest in the Australian blacks say that in their uninstructed state they can only count four or five, and that when they hold up both hands with all the fingers outspread they mean to signify a large and indefinite number, perhaps a score, or hundreds, or thousands. They have no words expressing abstract ideas, such as truth, justice, chastity, patience, though these ideas are conveyed as applying to individuals by adjectives and nouns, apart or in combination. They may be considered good linguists. An Australian aboriginal boy will acquire far more knowledge of English in three months than a smart English boy of the same age will of Latin in as many years; but of course it may fairly be urged that this fact is to be accounted for by the different modes in which the instruction is imparted. Still, apart from this comparison, it is certain that the natives, especially the young ones, do pick up the language of their conquerors very readily. Their

habit of speaking pigeon English is not so common in the settled districts now, as in former times, and was always owing to the whites being possessed with the notion that such a style of lingo was most suited to aboriginal tastes and comprehension. As a specimen, the following will puzzle anyone not accustomed to Australian natives and the sort of European instructors with whom they associate:—"You mene old lubra plour bag pony strike a "light 'long a wheelbarrow." This is a Fowler's Bay native's form of inquiring as to whether you have seen an old grey mare passing with a dray. When the natives are accustomed to be addressed in ordinary English, they make use of it themselves in their discourse, and many speak Chatham's tongue, as far as they have need to use it, much more correctly than the provincial laborer of England, though of course their vocabulary is limited by the subjects with which they are likely to have any concern.

In their impulsive moods they express themselves with an engaging frankness that is sometimes irresistibly amusing. Nearly twenty years ago, near Guichen Bay, Sir Richard MacDonnell was on foot on a rifle-shooting excursion, with only a black boy as his companion. During their ramble the native in a subdued voice exclaimed "There kangaroo, Gubner," but His Excellency was unable to distinguish the animal among the thick scrub. At last he asked the boy to point to it with the rifle, so that he could discover the object by looking along the barrel. The aboriginal complied, but unfortunately the temptation was too strong for the young savage; he pulled the trigger, and the marsupial rolled over dead. The Governor was displeased, and in an irascible manner asked his sable attendant what business he had to shoot. "Well, what por you b—— stupid?" was the reply. Sir Richard, with his Irish appreciation of the comical, could not be angry any longer, and used to relate the occurrence with great gusto. Occasionally aboriginal blunders are much like the proverbial Irish bull. Thus one who was sent by the manager of a cattle run to an out-station with some tobacco and a letter in which the quantity was mentioned, on being charged with having taken one or two sticks of the fragrant weed, asked his accuser how he knew, and being told that the letter disclosed the theft, replied "Him —— liar; me put em letter long a tree, put em "stone; he no see me take em baccy." The aborigines have a

keen sense of the ridiculous, and a story like this would send them into convulsions of laughter. Sarcasm is a gift of which they are by no means destitute. "My money in bank," said one in answer to a question. "Yes, that one bank," observed a companion, pointing to a public-house.

In their natural condition—hunting, fishing, tree-climbing—they are an interesting people in their fashion; but after being partially civilised, they in time lose much of their attractive physical qualities, and acquire all the vices that it is in the power of the whites to teach them. They become beggars, and loaf about the towns and farms as much as they are allowed. Missionaries in South Australia and other good people still talk in a sanguine strain of raising these poor creatures into a higher life; but there can be no doubt that the race is doomed, and all experience shows that they are incapable of acquiring permanent civilised habits. Were all the mission stations abolished they would leave little result behind them; in a very short time the natives gathered at those locations would be dispersed, seeking their livelihood either in the way of their forefathers, among the woods or in the waters, or wandering about the European settlements working a little and begging more. The natives are very useful to the squatters and agriculturists, especially to the former in new country. The skill of the savage in following the tracks of stray beasts makes his services of great value in the bush. The boys learn to ride easily, and become good stockkeepers. They are excellent shepherds, and in some parts of the colony do a great deal of the shearing; there are grazing farms on which all this work is performed by them. They are like children, however, in all their ways, and have no idea of settled, continuous, industry. After shearing season is over they take a long holiday, and often squander their wages on drink; for although it is forbidden by law to give alcoholic liquor to an aboriginal, there are always depraved whites who will supply them with intoxicants, and the orgies that take place at the native camps when the savages are under the influence of strong drink are sometimes shocking.

The Australian aboriginals appear to be a mixed race, the Malay element having a large share in the composition. Some are shades darker than others, the prevailing colors being a few degrees short of jet black. The pure bred infants are of a dark copper color,

and the same may be said of the palms of the hands of the adults, when they are washed. Near the seaboard of Northern Australia, even of late years, the lower sorts of Malays have sometimes mixed with the natives as though recognising them as kinsmen. This fact is referred to in Captain (now Sir George) Grey's interesting account of his explorations on the north-west coast. The differences in dialect between neighboring tribes many years ago created no small amount of surprise to missionaries, and "protectors of the aborigines," who found that when they had mastered a dialect it was only spoken by three or four hundred people. Some words, however, are common to tribes hundreds of miles apart, indicating a common original language. For instance, "cowee" or "cowie," was the name for water among the now extinct Adelaide tribe, as it is with the blacks about Fowler's Bay and the Great Bight, though explorers and other authorities about the two last-mentioned places spell the word "kauwe." It has been noticed, too, that in some cases there is a greater affinity between the dialects of tribes far apart than between those of other tribes occupying adjoining territories.

The customs of the natives vary, but some seem common to all. Everywhere they practise rites initiating youths into the privileges and responsibilities of manhood. These rites are in all cases very painful. In some of the northern tribes they include the knocking out of two front teeth, but this has never been practised by any natives within many miles of Adelaide. Along the west coast to beyond the Bight they circumcise, and, in addition, subject their young men to another operation of a very extraordinary character, described in Latin by Eyre in the account of his perilous journey from Fowler's Bay to King George's Sound more than forty years ago.* It is supposed that this operation checks the increase of population. The practice of circumcision extends into the far north, but is entirely unknown among the tribes within eighty or one hundred miles of Adelaide, and along the Murray, the Lakes, and the Coorong.

The style of tattooing differs in different tribes : funeral customs vary greatly. The custom of wearing a reed through the cartilage of the nose is observable in some parts of the country but not in others.

* "Finditus usque ad urethram à parte infera penis."

The corroboree, so familiar to pioneer colonists, is now seldom witnessed except in the form of miserable imitations of the grand performances of the old days, in which from three to six hundred natives sometimes joined. The corroboree is a dance to aboriginal music, the women beating time with sticks. The vocalism is rather monotonous, but according to scale, and the voices all blend together in harmony, a false note being rarely or never discoverable. The men are naked, with the exception perhaps of a small girdle round their loins. The female singers commence in a low tone, as though humming the words of a song, and often at times reach a higher pitch, and gradually soften down only to rise again, the men joining in the livelier parts. The dancing is confined to the men, and is perfect in simultaneous agility and wild elegance of movement, the style varying according to the occasion of the performance—whether it is connected with love, war, or hunting. Some of the corroborees are obscene. Some of the songs appear to have no meaning, or the natives do not choose to explain it, but there is no doubt they compose ditties for special occasions; they do this even in broken English, and it cannot be doubted they versify in their own language. They favor blank verse, and it is very blank. A war-dance, with the accompanying song, is a most exciting spectacle. The attitudes of the natives—the men, all warriors, painted in white stripes, sometimes with small boughs fastened round their knees, are most picturesque, as they advance, retreat, bound in the air, brandish their weapons, and stamp, all with a fiery spirit, but in perfect regularity, and singing their songs of triumph or defiance. The effect in the pale moonlight is greatly heightened by the surroundings; the fires burning in the front of the wurleys, the children and dogs grouped about, the scrub or forest trees in the background. The song at times deepens into a roar, in which, however, different voices can be distinguished, broken at times by preconcerted shouts and yells; and forty-six years ago, to the European newly arrived in the country, the noise at a distance was, at times, in the dead of the night, almost appalling, as the voice of some broad-chested warrior was heard clearly above the mighty volume of sound that he helped to swell. In the infancy of Adelaide there was a black who had obtained from the new-comers the name of Tam o' Shanter, whose grandest vocal efforts became familiar to

the colonists as they sat outside, or reclined in their tents and reed huts.

Tam o'Shanter and all his tribe have been gathered to their fathers many years ago, and the same fate has befallen the Mount Barker, Gawler, Burra, and other tribes. Their disappearance is owing to disease consequent on vicious intercourse with Europeans; to changes in their modes of life, and it may be said even to the kindness of the white settlers. Among the tribes just mentioned few lost their lives through encounters with the intruders upon their soil. The disease indicated has had the chief share in sweeping them away; drink contributed slightly to the result; sudden changes in habitation and clothing did more. It may be said of many of the blacks that they died of blankets; they slept under them, got wet in them, and walked about with the wet blankets clinging to their bodies, the result being violent colds and consumption. Many natives die of pulmonary complaints. They know when they are thus afflicted and what the end will be. A young man in the bush will place his hand on his chest and say "Very bad, bine bye crackaback" (die). As a rule they do not fear death, and this has been noticeable in the case of those executed for murder. They ascend the scaffold, or when a cart does duty for a scaffold, stand up with a stolid indifference, perhaps throw down a stick of tobacco and a knife, or whatever may be about their persons, and generally request that whites may not touch their bodies after death.

The first settlers about Adelaide had little trouble with the natives. Two or three Europeans were murdered—in one case through revenge, in the others from purposes of plunder. Several blacks were accordingly hanged, and no more murders of Europeans took place near the metropolis. A black killed a white man in those early days at Encounter Bay, but the general feeling was that the European got his deserts, and nothing was done in the matter. In 1840 a terrible tragedy occurred on the south coast; the brig *Maria*, bound from Port Adelaide to Hobart, was wrecked near Lacedpede Bay, and the passengers, sixteen in number, including men, women, and children, the captain, mate, and crew of eight men and boys were making their way overland to the mouth of the Murray, when they were massacred by the Milmenrura tribe. Major O'Halloran, having under him Captain Nixon, Lieutenant

(now Admiral) Pullen, Mr. Charles Bonney, Inspector Tolmer, and a large force of police-troopers and sailors was despatched to the scene of the outrage or outrages, for the people appeared to have been murdered in different parties. Two of the blacks were shot at and severely wounded, but whether they died of their wounds was never ascertained. Two ringleaders were captured, tried by drumhead court martial, and hanged in presence of a number of their tribe, who were compelled to witness the execution. The effect was most salutary. Not a European has been murdered by blacks in that part of the country since then, with the exception of a man named McGrath in the year 1844, and the principal actor in that crime was tried in Adelaide and suffered the last dread penalty of the law. For several years the Upper Murray blacks attacked the overland parties from New South Wales, but the terrible lesson these savages received on the Rufus from a party of police, volunteers, and overlanders, quieted them permanently. It was a long time before, in the Port Lincoln country, they were made sufficiently aware of the hopelessness of carrying on a warfare with the white man, and the community was frequently thrown into a state of excitement by the news of some horrible murder being committed by the blacks upon whites in that part of the province. Sometimes the victim was a squatter, sometimes a shepherd, a shepherd's wife, or a child. At last the vigor with which the tribes responsible for these outrages were followed up, and the actual or most guilty murderers captured, and, after trial, executed on the spot where their crimes were committed, had the desired deterrent effect. Higher up the coast near Denial, Venus, and Fowler's Bays, blacks—one or two at each place—were executed, and no murders of whites have taken place in those parts since then, now more than twenty years ago. In the south-east the aboriginals were brought into order by rougher and less regular means; but for more than thirty-five years they have been at peace with the pale faces. The aborigines are treacherous like other savages; they are hardly brave, but they endure pain with great fortitude. Their battles are not very sanguinary. There is plenty of noise and action, but little harm is done. Spears are thrown with unerring aim, but eluded by agility or stopped by a shield. Of course with hundreds of missiles hurtling through the air, some one must be hit sooner or later; but when one or two

heroes have bitten the dust, the side on which the fatalities have taken place make a precipitate flight, and the victors do not follow and massacre them after the fashion of barbarous peoples in other parts of the world. Their weapons are simple, consisting of knobbed or plain clubs or sticks called waddies, wooden spears, plain, or barbed with stone, or having the barbs cut out of the wood itself; wommeras, an implement used for throwing the spear; and the far-famed boomerang, a curved weapon, which, thrown with great force, travels a long way and comes back to the feet of the thrower. Other implements, such as the wadna or yam stick, are used for digging up roots, and a sharpened stick for climbing trees. After the Europeans arrived, glass, wherever the blacks could obtain it, supplanted flint and other stones for barbs and sharpening purposes. The weapons differed in different tribes, and some have entirely disappeared with these tribes. It is doubtful if in Adelaide or Mount Barker a "waddy" could be obtained now for any amount of money. These weapons and implements; their rugs made of the skins of marsupials, sewn together with thread obtained from the sinews of animals; twine and cords made from grasses; bags and baskets, fabricated from similar materials; nets, bone fish-hooks, and the bark canoes of lake and river tribes, are their only manufactures. Their dwellings or "wurleys" are composed of boughs, and sometimes are little more than break-winds. The finest and most muscular men are the Murray and Coorong blacks, though they have degenerated; the most puny are along the west coast, especially about Fowler's Bay and the Bight, and in some parts of the far north.

In these descriptions of native customs and habits, as far as South Australia proper is concerned, it would be almost correct to speak in the past tense, for the disappearance of some tribes, the great diminution in the numbers and the change in the habits of others, brought about by forty-seven years of European occupation of the country, have almost banished tribal war, and the customs essentially connected therewith over the larger portion of the country.

The marriage customs of the blacks are peculiar, and in some respects revolting. Polygamy used to be practised, but has gone out of fashion, unless it remains in the far north. Infanticide is

commonly practised among all natives not much under European influence. The half-castes in the early days of the province were all destroyed ; but this is not the case now ; half-breeds and quadroons may be seen about the country, and generally combine with some of the intelligence of the white father, the bad qualities of both parents. The women are cruelly treated, their lot being a hard and degrading one ; but children, when once it is resolved to preserve them, are shown great indulgence by their parents and all the tribe.

The natives have their superstitions. They believe in demons, apparitions, sorcery, and a future state. It used to be a common belief among some tribes that after death they would reappear on earth as white men. Generally they feared to travel at night time. Very rarely, in South Australia, has any murder or other outrage been committed between dusk and dawn.

The natives in the year 1881 numbered 6,346 including those between the northern boundary of South Australia proper, and Barrow Creek, about latitude $21^{\circ} 30'$. That even so many children of the forest remain is owing in a great degree to the mission stations, where women and children as well as the old blacks have been kindly cared for, and the feeble and sick have at all times found refuge. In all settled districts there are medical men whose paid duty it is to attend to the natives when required. In their natural condition the savages have their own doctors, whose mode of treatment, generally absurd, is often indescribably disgusting ; but they soon learn to place far greater confidence in European physicians than in their own practitioners. Their ailments of the body are as carefully attended to as are their spiritual needs at the mission stations, and the natives seem happy there. Many of them frequently, however, leave, and after wandering about among the settlers or in the bush, return for a quieter life. The object aimed at by the managers of these stations is, while instructing the natives and teaching them morality, to lead them as far as possible to earn their own living in any honest way most suited to their strength and habits. About the lakes they fish and shoot, for the market, and make mats and baskets for sale. The head quarters of these tribes are the Point Macleay Mission, of which the Superintendent is Mr. Taplin, whose late father had managed it for many years. The other stations are Poonindie, at Port Lincoln ; Kop-

peramana, far north ; and Hermansburgh on the banks of the Finke River, central Australia. Of the latest official returns of expenditure on these stations, some are for 1881, and others for 1882, and the total comes to nearly £10,000 ; but sales of pastoral and agricultural produce brought considerably more than half this amount. There is a large expenditure upon the aborigines, independently of the mission stations. The Government and colonists alike are swayed by the feeling that if the people whose lands they have taken are fated to disappear, their last years shall be cheered by kindness and sympathy, and that it shall not be said that they passed away without an effort being made to save them from perishing.

CHAPTER XX.

THE FAUNA OF SOUTH AUSTRALIA.

The dingo—The kangaroo dog—Marsupials—Other mammalia—Birds—Acclimatised animals—Hares—Rabbits—Deer—Sparrows.

NEXT to the climate and pasture, the absence of formidable carnivora has been the greatest cause of the rapid growth and the great prosperity of the pastoral interest in Australia. The fauna are pretty nearly the same all through the island continent, though a few animals found in some colonies are not met with in others. The wild dog or dingo is common to all. Naturalists describe it as a small wolf. It is about the size of an ordinary sheep dog, and is not gregarious; though occasionally small packs of from four or five to a dozen are seen together, it is generally found single or in couples. Its most common color is yellow, but sometimes black dingoes are met with; a white one may be regarded as a *lusus nature*, and such a curiosity has now and then been killed. The hair is not long nor yet very smooth; in length it is something between that of a pointer and a setter, but rather coarse. The tail is bushy. The dingo has a dismal howl, that is heard for an immense distance, and has a depressing effect upon some persons who hear it for the first time in the bush. In fact the sounds in the wilds of Australia, especially in the hours of darkness, are sometimes the reverse of cheerful; but perhaps the most gloomy way of passing a night is to lie at the foot of a sheoak tree, of which the branches, when stirred by the faintest breeze, give forth a weird wailing sound, while a chorus of howling dingoes and screaming curlews around completes the bushman's sense of desolation and melancholy, from which perhaps towards daylight he may be aroused by the rich joyous vocalism of the magpie—which, in spite of its name, is a really musical bird.

There is no sense of danger connected with the howl of the dingo, for it never attacks man. It is most destructive among sheep, and kills many more than it eats, snapping right and left when it gets into a flock. As a rule when it kills a sheep, it tears it open and takes out the paunch, which it devours first, and often leaves the rest of the carcass for a future meal, or for dogs or carrion birds that may follow. Of indigenous animals the dingo and the eagle are the only enemies the grazier has to fear, and the royal bird only kills the lambs. Dingoes rarely attack calves, and when they do they are generally led into this mischief by domesticated dogs that have run wild. Though the tame dog as a rule treats the dingo as a natural enemy, and is greatly disturbed by sight or sound of it, yet they do make friends at times and inter-breed, but this cannot take place to any great extent while the dingo is in a wild state, for the breed seems just as pure as when the white men first came to Australia. When the dingoes are tamed, however, they cross freely with all sorts of tame dogs, and the progeny are as fertile as their parents. A cross between a dingo and a collic used to be greatly valued as a cattle dog. Dingoes are destroyed by strychnine, though many are killed by kangaroo dogs, which, when trained, enjoy this sport as much as kangaroo hunting. The dingo defends itself furiously, but does not seize its antagonist and hold on; it snaps and bites pieces out, sometimes laming the hound seriously. The kangaroo dog, which is peculiar to Australia, was originally a cross between the greyhound and the Scotch deerhound, and for combined strength and swiftness cannot be surpassed. It has such a powerful jaw that it often breaks the ribs of a dingo or a kangaroo, when it seizes them about the brisket.

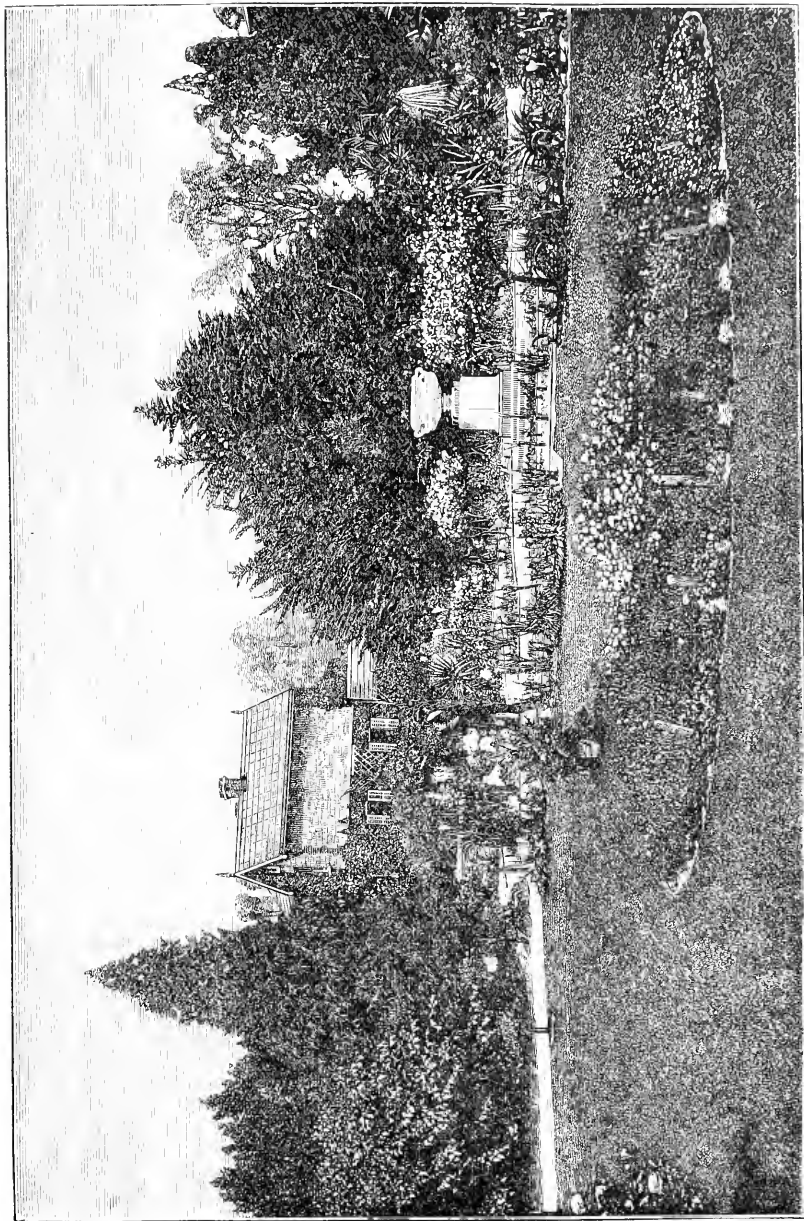
The mammals by which Australia is most distinguished are the marsupials, or pouched tribe, which are of considerable variety. The kangaroo is the largest and best known. Its greatest weight is 200lbs. It feeds on all fours, but at other times moves only on its hind legs and tail; without the latter it would be helpless. The tail sometimes weighs 27lbs. Some species of kangaroo are red; these, which are not so common as the grey sorts, are generally by themselves in some parts of the country; in other parts they mix freely together. The Euro or Uroo is the name given to one species of red kangaroo. The wallaby is a smaller kind of marsupial, and of this there are many species, varying in

size, form, and habits. Some burrow; others are fond of the rocks; others are like the kangaroo in their habits. They range in weight from five or six to thirty pounds. Some are red, but grey is the prevailing color with all the marsupials. A white kangaroo has been seen now and then, but it is considered a freak of nature. There are small marsupials, that are classed as bandicoots, rats, mice, and jerboas, and some of these creatures eat carrion. The native cat, which is carnivorous, the spiny anteater, and the duckbill platypus (*Ornithorhynchus paradoxus*) are marsupials; another, the native bear, which is not met with in South Australia, is a purely vegetable-eating animal, and resembles Bruin of other countries only in shape and the ability to climb trees. The flying fox is found in the Northern Territory. The wombat is a shortlegged, broad, plump animal, about thirty or forty pounds in weight, so solid and so tough in the hide that a dog can hardly bite it. The wombat burrows, and is a sleepy harmless creature, rarely seen in the daytime, except at dawn or dusk, or just after rain. There are many other species of marsupials. The non-marsupials, which are more numerous than most people suppose, include besides the dingo, rats, mice, bats, and the seal tribe.

The grandest of Australian birds is the emu, almost as large as an ostrich. The feathers are of no value, but most valuable oil for healing purposes is obtained from between the skin and the flesh. There are eagles, falcons, hawks, kites, and owls; the native companion, a tall, slender, handsome bird found in swampy localities; bustards, quail, plovers, black swans, geese, and ducks of many sorts, teal, widgeons, and various other aquatic birds; landrails, sandpipers, and snipe; a great variety of parrots and parakeets; the bronzewing, crested, and other pigeons and doves; the crow tribe, magpies; cockatoos, both black and white. Songsters are few, but there are many pretty little birds, some of them beautiful, including the oriole, the silver eye, redbreasted and other robins, finches, fantails, kingfishers, swallows, and swifts. The laughing jackass (*Macalo gigantea*) is peculiar to Australia, and owes its popular name to the close similarity of the noise it makes to human laughter of the most vacant type. About the shores, sea arms, and salt lakes, pelicans, gulls, and other marine birds abound. Mr. F. G. Waterhouse, C.M.Z.S., H.M.R.S., and F.L.S. New South Wales, the late curator of the South Australian

Museum in Adelaide, states that there are nearly 700 species of birds in Australia; and most of these are to be found in South Australia. The seas abound with fish, and of the palatable sorts the schnapper is the largest, the ordinary weight being from six to ten pounds, but larger specimens are frequently caught. The bream, mullet, butter-fish, garfish, and snook are favorites, but other kinds are palatable. In the Murray and lakes the cod and the mullaway are the largest, weighing frequently fifteen or twenty pounds. In the Upper Murray cod have been caught very much heavier. The native fish of other South Australian rivers are very small, though of exquisitely delicate flavor; larger kinds from Europe and elsewhere have been placed in some of the streams to breed, and the experiment appears to have been successful. The reptiles include lizards of many kinds, snakes (some sorts being poisonous), scorpions, and centipedes; but it is very rarely that anyone is injured by these creatures. The white ants are destructive, but builders and houseowners have learned by choice of timber and other precautions to check their ravages. In the Northern Territory these little creatures have done an immense amount of damage in houses and the plantations. The blacks in some parts of the continent eat them.

In South Australia a few animals have been acclimatised. The hare is rapidly spreading over the country, and affords fine sport both for the gun and hound. It is much stronger than in England, and breeds three or four times as fast. The rabbit increased till it had to be treated as a public enemy. It destroyed wheat crops and consumed so much pasture that it became a question whether the farmers and squatters or the rabbits were to occupy the country. The Parliament passed a Rabbit Destruction Act, and the Government has spent many thousands a year in destroying these rodents, at the same time requiring the settlers to aid in the work, or contribute to the expense. The pest is subdued, but probably will never be entirely extirpated. The sparrow, introduced as an insect destroyer, swarms in millions, and prefers corn and fruit to grubs; therefore the Government pays so much per dozen for heads or eggs of this feathered nuisance. Deer have been bred on an estate about thirty miles from Adelaide, and now and then individuals of the herd are seen a considerable distance from their native preserve.



Botanical Garden—Curator's Residence.

CHAPTER XXI.

FLORA OF SOUTH AUSTRALIA.

For this chapter are used, in a slightly condensed form, a contribution to the late Mr. Hareus's book on South Australia, and a portion of the "Report on the progress and condition of the "Botanic Garden and Government Plantations during the year "1882," by R. Schomburgk, Phil. Dr., Director, Knight of the Imperial Order of the Crown; of the Order of Merit of Phillippe the Magnanimous, and the Order of the Crown of Italy; Mem. of the Imperial Carol. Leopold. Academy; Hon. Mem. Bot. Soc., Magdeburg; Cor. Mem. Zool. Soc., London; C.M.R.B.S., Lond.; C.M.B.S., Edin.; C.M.G.S., Berl. and Dresd.; C.M. Soc. Nat. Cherb., France; C.M.H.S. Berl. and Frank-on-M.; C.M. Soc. Phys. Medica, Erlangen; H.M.R.S., N. S. Wales, &c., &c.

The most predominant orders of the South Australian flora, like those of the other parts of the continent, are—*Leguminosae*, *Myrtaceae*, *Compositae*, *Proteaceae*, *Cruciferae*, *Rubiaceae*, and *Gramineae*; abundant in genera, species, and individuals. Very singularly circumscribed are the genera and species in area; many are found in one spot alone, and a diversity in soil and locality brings forth other genera and species; the rapid succession of forms, and the contrast in this respect between the northern and southern parts being remarkable.

The bark of most of the trees is usually smooth and of a greyish color, which no doubt is accounted for by the slight atmospheric changes—the contrast not being so sudden and great as in colder climates. Most of the leaves of the trees and shrubs are coriaceous, rigid, and pungent, and of a shining glaucous color, which is especially perceptible in the orders *Proteaceae* and *Epacrideae*. Yellow-colored flowers are the most predominant.

The preponderance of the two great genera of the Australian flora, viz., *Eucalyptus* and *Acacia*, also prevails over the whole area of South Australia, but with a deficiency in species in comparison with those of the west and east flora. The number of species of *Eucalypts* known at

present in Australia is about 134 : of these only thirty, and of *Acacia*, of which 300 species are described, only seventy appear in South Australia.

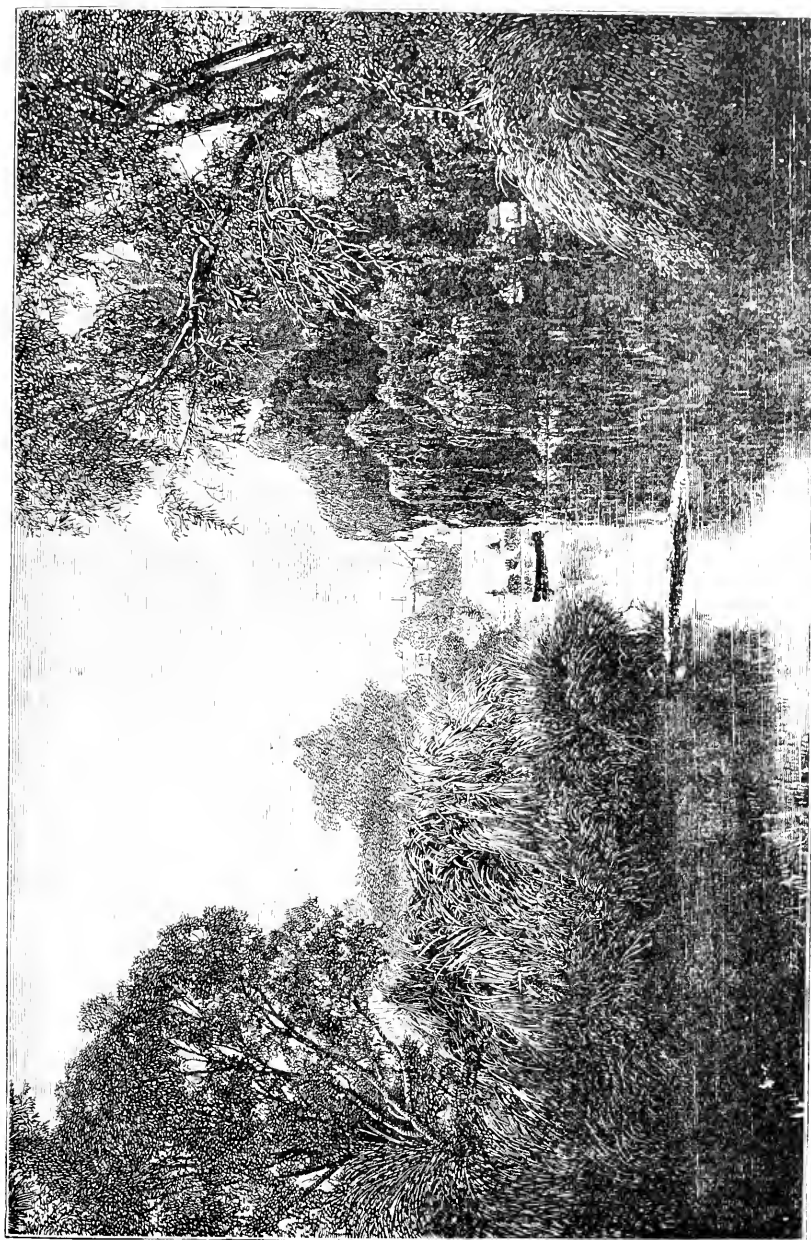
The trees of South Australia do not reach so great a height as those in the east, north, and west, though there are rare specimens of immense girth and height—the average that our tallest trees, the *Eucalypts*, obtain, is from 100ft. to 120ft., with a stem of from 4ft. to 5ft. in diameter; and such trees are only found in districts favored by good soil, or on the banks of the rivers : but these heights sink into insignificance compared with those of trees indigenous to Victoria, Tasmania, and Western Australia, where it is stated that the *Eucalyptus globulus* reaches 300ft., and *E. collosa*, F. Muell., of Western Australia, 400ft.; but more astonishing still that a fallen tree of *E. amygdalina*, Lab., in the Dandenong Mountains, Victoria, measured 420ft. in length.

The presence of different species of trees in South Australia is also limited in comparison to the other parts of Australia. According to Baron von Mueller, the list of trees above 30ft. in height in Australia comprises 950 kinds. Of these eighty-eight are found in South-western Australia, only sixty-three in South Australia, 146 in Victoria, 385 in New South Wales, 526 in Queensland, 212 in North Australia, and twenty-nine in Central Australia. Only the *Eucalypts* furnish South Australia with timber for building. They are found in all parts over the area of the colony, and constitute most useful timber-producing trees.

Amongst the eighteen to twenty species of *Eucalypts* appearing in the extra-tropical part of South Australia, there are only four to six kinds which are most valued. These are distinguished by certain colonial names, such as red, white, and blue gum, stringybark, and peppermint, *Eucalyptus rostrata*, Schlecht.; *riminalis*, Labil.; *odorata*, Behr. Their timber is highly valued for building, railway, water, and wheelwright work, as naves, felloes, and spokes, and as posts for fencing and other purposes. The stringybark, *Eucalyptus obliqua*, L'Her., is much valued, being the only kind fit for shingles, and, as a free-splitting wood, the best for forming rails; but it is not so durable as the other kinds.

The wood of the *Acacia* tribe is only useful for cabinet-work and turning, for which purpose the blackwood, *Acacia melanoxylon*, R. Br., is very much valued. The wattle of the colonists, *Acacia pycnantha*, Benth., is very valuable, on account of its freely-exuding gum, and also for its bark, the latter containing excellent tanning qualities; and both these products form a very important article of export. The wood of the so-called sheaok, *Casuarina stricta*, Ait., is of an excellent character, and used for cabinet-work, turning, and handles for tools.

The tea-trees, a name applied by the colonists to the genera *Mela-*



Botanical Garden The Lake

leuca and *Leptospermum*, constitute a class of hard wood usually found in low, moist situations, and on the banks of creeks; is valuable on account of its imperishable nature when used under ground, or even in water. The timber is remarkably close-grained, extremely hard when dry, very heavy, and generally sound in the heartwood, which is not always the case with other hard-wooded trees.

The pretty mottled wood of the native pines of South Australia, *Frenela robusta*, A. Cun., and *rhomboidea*, Endl., lack durability, and are mostly used for fencing stuff and fuel. The native cherry, *Exocarpus cupressiformis*, Labil., the honeysuckle, *Banksia marginata*, Cav., furnish also handsome woods for cabinet-work; and *Myoporum acuminatum*, R. Br., has a white soft timber, extremely tough, forming excellent knees for boats.

A most remarkable fact in South Australian vegetation is the absence of native eatable fruits, of which there are none deserving the name, except a few berry-bearing shrubs belonging to the order of *Epacrideae* and *Santalaceae*, *Astroloma* and *Leucopogon*, the principal species of which, the native currant of the colonists, *Astroloma humifusum*, R. Br., and the so-called native peach, *Fusanus acuminatus*, R. Br., bearing a globular fruit of the size of a small peach, with a succulent epicarp and a hard, bony, much-pitted endocarp, are all South Australia can boast of. There is also a deficiency in eatable root-bearing plants.

A great many genera of plants of other countries, which possess valuable and powerful medicinal properties, have numerous congeners in the extra-tropical, and more especially in the intra-tropical portions of South Australia, of which I will only mention the following orders, viz. : — *Euphorbiaceae*, *Urticeae*, *Campanulaceae*, *Solaneae*, *Apocineae*, *Leguminosae*, *Asclepiadeae*, *Gentianeae*, *Scrophularineae*, &c.; containing numerous genera and species, probably possessing similar valuable properties, which may be considered as so much buried riches hitherto unheeded, and therefore not utilised. Only lately the wonderful febrifugal properties of the *Eucalypts* have been discovered in Europe. The polygonaceous plant, *Muehlenbeckia adpressa*, Meisn., called by the colonists "Native Sarsaparilla," produces the same effects as the true *Smilax Sarsaparilla*, Lin.; and the *Erythraea Australis*, R. Br., contains the same bitter as its congener in Europe, *Erythraea centaurium*, Pers. There are no doubt many trees of the orders *Urticeae* and *Sapindaceae* containing also that valuable substance caoutchouc, especially the species of *Ficus*, so abundant in the intra-tropical part of South Australia.

The same ignorance prevails also with regard to the fibrous and dye plants. Of the first I will only mention the *Linum marginale*, A. Cun.; *Hibiscus tiliaceus*, Lin.; the *Crotalaria dissitiflora*, Benth., from the

fibres of which the natives prepare their fishing nets and cordage. Several other plants are known to possess the same properties, especially *Pimelea stricta*, Meisn.; *axiflora*, F. Muell.; and *microcephala*, R. Br.

Gum and resin bearing trees are also abundant. I have already mentioned the valuable gum of the wattle, *Acacia pycnantha*, but there are several more species producing gum, as *Acacia acuminata*, Benth., &c.

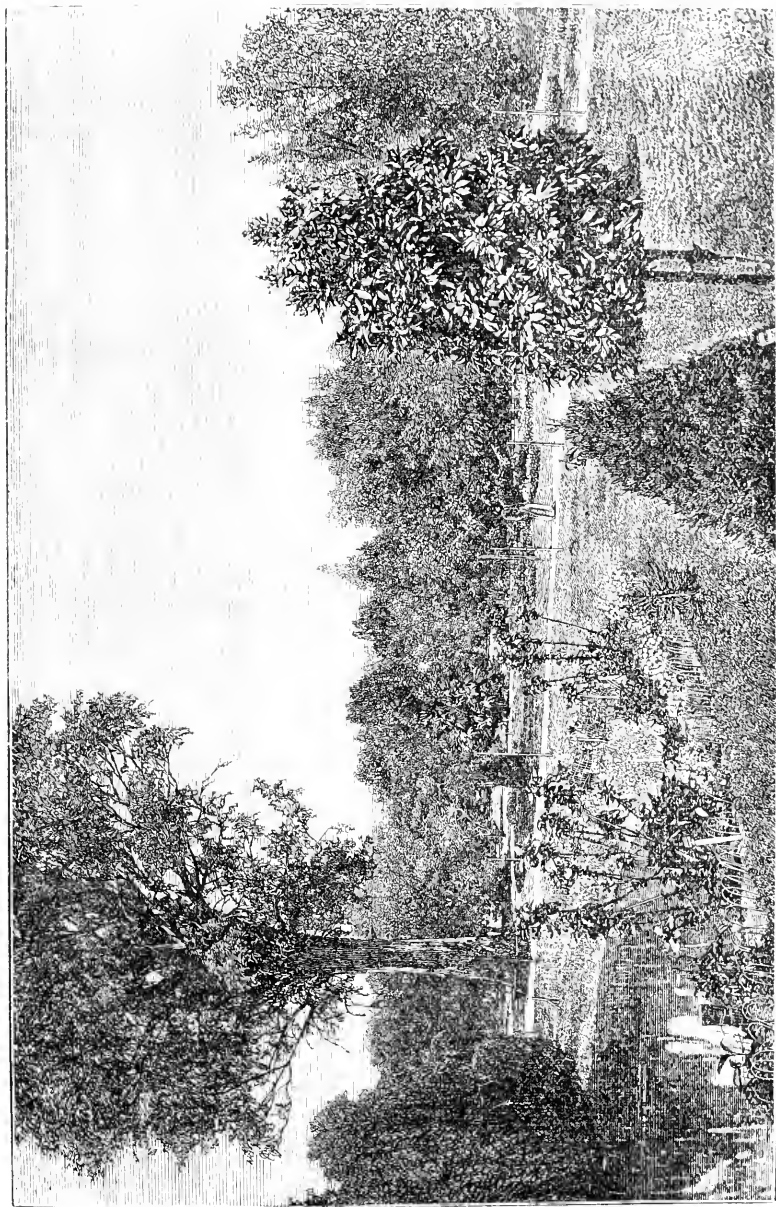
The conspicuous plants which greatly contribute to the interesting character of the Australian flora, the grass trees of the colonists—*Xanthorrhoea quadrangulata*, F. Muell., and *semiplana*, F. Muell., exude a resin which contains nitro-picric acid, from which a valuable dye may be prepared.

The flora of South Australia provides copious material for the manufacture of the best paper. Not alone a great number of representatives of the *Gramineae* and *Cyperaceae*, viz.:—*Dichelagne crinita*, Hof., *Xerotus longifolia*, R. Br., *Cyprus lucidus*, R. Br., *vaginatus*, R. Br., *Scirpus lacustris*, Lin., but also the bark of *Eucalypts*, and the leaves and bark of *Casuarina*, provide splendid material for paper.

Poisonous plants are known, though there are not many in South Australia. One of the most dangerous to the sheep stock is the *Lotus Australis*, Andr., which is very generally distributed, and does great injury: but I consider the poisonous principle lies mostly in the seed. The River Darling Pea, *Swainsona Grayana*, Lindl., produces also poisonous effects on the cattle, especially on horses. A *Lobelia L. pratioides*, Benth., fortunately is not frequently seen in South Australia, but it appears more plentiful in Victoria, to the great injury of stock.

Although the injurious weed *Solanum nigrum* is common in most tropical and temperate parts of the globe, I think it has been introduced into Australia with cultivation. *Laurencia spicata*, Hook., is also considered by the stockholders on the Peninsula injurious to cattle and sheep. But as the plant is eaten by the cattle before seeding without injury, I believe that the rigid, pungent, bracteate leaves with which the flower-spike is densely covered, especially in the upper part, and which, as the seed ripens, become more coriaceous and pungent, are the dangerous parts of the plants, and these parts, when eaten in quantity, will, no doubt, injure the mucous membrane of the stomach and produce inflammation. As the uniform character of the order of *Malvaceae* is that it abounds only in mucilage, and is totally destitute of all unwholesome qualities, it would be very peculiar should this species contain poisonous properties.

A very peculiar phenomenon of the South Australian vegetation is, that most kinds of trees and shrubs, when dying, die from the tops downwards. It is also a remarkable characteristic that by age the common



Botanical Garden—Gum Tree and Native Shrub Plantation.

habit of plants is often much changed, which is proved by the fact that during the period of development and subsequently the individual parts of those which are not flowering and fruit-bearing are different. This anomaly, caused by age and time, not only refers to the dimensions of leaves and flowers, but also to their nature.

If we review the several orders of plants of South Australia, we find that the extra-tropical part is characterised by the remarkable absence of several orders, although it is not impossible that by further discoveries in the central part—as this part has, as yet, been but imperfectly explored—a few representatives of one or the other order may yet be found; but probably the number will not be extensive. The extra-tropical part of South Australia is destitute of the following orders, viz.:—*Simarubaceae*, *Burseraceae*, *Meliaceae*, *Salicineae*, *Celastrineae*, *Ampelideae*, *Anacardiaceae*, *Magnoliaceae*, *Birincæ*, *Araliaceae*, *Malpighiaceae*, *Guttiferae*, *Ericaceae*, *Plumbagineae*, *Myrsinæ*, *Supotaceae*, *Ebenaceae*, *Styriaceae*, *Hydrophyllaceae*, *Gesneriaceae*, *Bignoniaceae*, *Saxifrageae*, *Samydaceae*, *Elaeagneae*, *Cupuliferae*, *Piperaceae*, *Selagineae*, *Scitamineae*.

Although the order *Orchideae* is represented by numerous species of terrestrial ones, there is an entire absence of epiphytial *Orchids* in the extra-tropical part. So are also *Cryptogamic* plants extremely rare; even the order *Filices* is poorly represented.

The orders most abundantly distributed over the whole area are:—*Leguminosae*, *Myrtaceae*, *Compositae*, *Chenopodiaceae*, *Cruciferae*, *Proteaceae*, *Goodenoriaceae*, *Euphorbiaceae*, *Scrophularineae*, *Ficoideae*, *Boraginæ*, *Labiatae*, *Amarantaceae*, *Convolvulaceae*, *Epacridae*, *Urticeae*, *Orchideae*, *Amaryllideae*, *Liliaceae*, *Restiaceae*, *Cyperaceae*, and *Grammineae*.

Having given a general description of the flora of South Australia, I proceed now to its special peculiarities in the several localities or regions individualised and distinguished by the predominance of one or more families, although the boundary is in no way so sudden as to preclude certain species from spreading over all regions, especially trees which, at the same time, are equally common in the scrub and grass lands: and also herbaceous plants, a great number of which appear in the grass land, scrub, and forest region.

Notwithstanding the little apparent difference in the formation of its surface soil and climate, the flora of South Australia introduces itself to the observer in its geographical extension by special and peculiar forms of plants in regions. These are the regions of the forest land, scrub land, grass land, and the intra-tropical region.

FOREST LAND REGION.—The region of the forest land in South Australia occupies mostly the mountainous districts, and extending along

the base of the mountain chains. The forests have not the fullness and lofty growth of those of other countries. The underwood is of a medium size, more open and less difficult to penetrate; the forests are of less extent and are intercepted by tracts of grass land. The *Eucalypts* are the most predominant forest trees—the stringybark forming often whole forests in some mountainous districts, but seldom seen on the plains. *Eucalyptus paniculata*, Sw.: *riminalis*, Labil.; *rostrata*, Schlecht.; *odorata*, Behr., are the most prevalent species.

The trees of the forest do not appear crowded, and seldom do the branches of a tree reach those of a neighboring one. The declivities of the mountain ranges are for the most part similarly timbered, the trees sometimes extending to the summits, often only half or two-thirds of the remaining part being grassed, here and there with copses of low-growing shrubs, and stunted and much ramified trees; often the whole declivities are grassed without even a shrub or tree.

Another feature of the table land in the hilly districts is the appearance of occasional hills clothed only with a scanty covering of tussocky grasses, among fragments of ironstone, quartz, and sand, destitute of all other vegetation, except small scattered trees of the *Casuarina stricta*, Ait., and *glauca*, Sieb., and the peppermint, *Eucalyptus odorata*, Behr.

The level tableland is generally covered with grass, but deficient in shrubs. Here, scattered, are to be seen the most stately and majestic trees of *Eucalypts*; such tablelands appearing more like a park—the trees standing seemingly at measured distances, single or in small clumps, as if planted by the hands of a landscape gardener. The soil of such tableland is generally speaking very rich, and produces abundant crops of cereals. The underwood of the forests is mostly represented by the following genera, viz., *Correa*, *Alyxia*, *Prostranthera*, *Grevillea*, *Hakea*, *Isopogon*, *Exocarpus*, *Acacia*, *Banksia*, *Cassia*, *Calythrix*, *Pommaderis*, *Leucopogon*, *Leptospermum*, *Daviesia*, *Dillwynia*, *Eutaxia*, *Platylbicum*, *Pultenaea*, and shrubby *Eucalypts*.

The beautiful genus *Epaeris*, which is only represented in South Australia by one species, *E. impressa*, Labil., frequently covers whole mountain ridges and declivities; when in bloom the different shades of color of its flowers produce an effect not easily described.

The most prominent and striking effect of the mountain forest region is produced by the grass trees, *Xanthorrhoea quadrangulata*, F. Muell.; and *semiplana*, F. Muell. These plants have a peculiar grotesque appearance of a type unknown in other countries, at once arresting every traveller's attention by their strangeness.

They appear mostly on the ridges and declivities of rocky and stony hills, almost devoid of any other vegetation, and are also found on some



Botanic Garden—Another view of the Lake.

wooded lands, but never on the plains. *Xanthorrhoea quadrangulata* grows from 10 to 12 feet high, often with a trunk about one foot or eighteen inches in diameter, and the flower stalk from 6 to 10 feet high. Sometimes specimens are found repeatedly branched in a dichotomous manner, all the branches of equal thickness, which gives them a most grotesque appearance. This species appears only in hilly districts on the most rocky declivities; they drive their straggling roots into the crevices of the rocks several feet down amongst the accumulated vegetable soil. The grass trees are of slow growth; the largest specimen must be several hundred years old. The second species, *Xanthorrhoea semiplana*, is often found at the base of the hills in sandy soil; it forms its stem underground, which extends often two to three feet before the few straggling roots appear, and the leaves lie close on the ground. This species is also of an ornamental character. The valuable brownish-yellow resinous exudation of the root and lower part of the stem I have already mentioned.

The deep gullies formed by the ridges and hills, in which the dew most frequently supplies the place of rain during the dry season, are covered with shrubs and ferns. The soil is generally formed of black or sandy peat of a very humid nature, being watered by streamlets running throughout the year, and forming, in some rocky situations, picturesque cascades. In such gullies are associated the most delicate and beautiful plants the flora of South Australia produces. Only in such places do we find assembled the handsomest ferns in great profusion, the stately *Todea Africana*, Willd., with trunks often 5ft. to 6ft. in circumference, often forming impenetrable thickets along the rocky banks of the streamlets; *Gleichenia microphylla*, R. Br., thriving luxuriantly in the crevices of the rocks; with the elegant *Adiantum Aethiopicum*, Lin., *Botrychium ternatum*, Swartz., *Lomaria discolor*, Willd., and *capensis*, Willd., *Aspidium molle*, Sw., *Grammitis leptophylla*, Swartz., and *Rutifolia*, R. Br., interspersed with the lovely *Viola betonicaefolia*, Sw., and *hederacea*, Labil., which border the water edges; and the blue flowers of *Caesia* and white of *Burchhardia* give a great charm to such waterfalls not easily described.

The declivities of the gullies are mostly taken possession of by the luxuriant-growing *Pteris esculenta*, Forst., massed together and forming often impenetrable thickets, while the graceful *Cheilanthes tenuifolia*, Swartz., is generally found in the grass-land at the base of the hills, extending even a short distance into the plains. There also grow magnificent trees of *Eucalypts*.

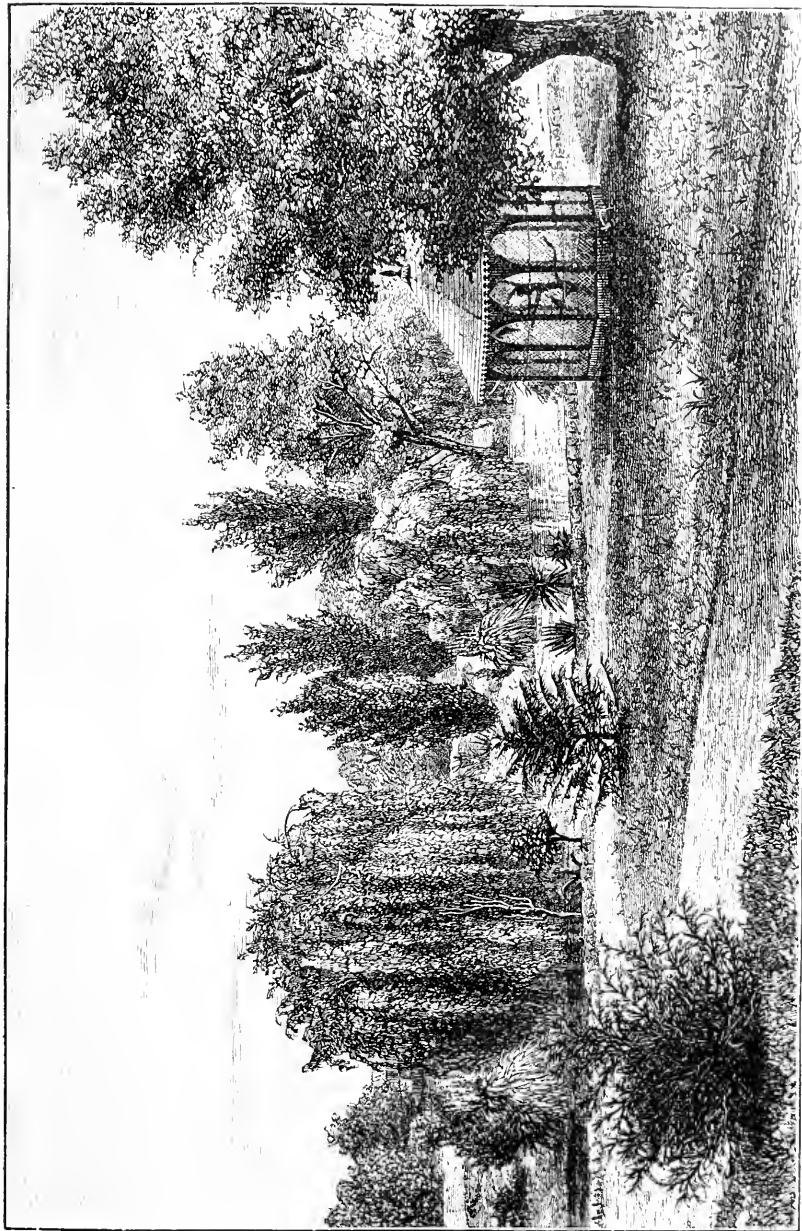
In such gullies, with their fertile soil and cool clime, the greatest part of our culinary vegetables are grown for the market to a degree of

perfection unknown elsewhere, and uninterruptedly supplied throughout the year. Not vegetables alone, but fruits, viz:—Gooseberries, strawberries, raspberries, and currants, &c., are raised in the same perfection.

At the base, and also extending further up on the slopes of the hills, generally in spots least covered with underwood, appear the various and beautiful terrestrial *Orchids*, with their delicate and quaint flowers, together with other monocotyledonous plants, viz:—*Patersonia longiscapa*, Sweet., *Hypoxis glabella*, R. Br., *Caesia parviflora*, R. Br., *Arthropodium laxum*, R. Br.

The most conspicuous *Orchids* are:—*Glossodia major*, R. Br., *Calenia Patersoni*, R. Br., *latifolia*, R. Br., *carnea*, R. Br., *Cyrtostylis reniformis*, R. Br., *Pterostylis cucullata*, R. Br., *reflexa*, R. Br., *barbata*, Lindl., *longifolia*, R. Br., *Thelymitra aristata*, R. Br., *carnea*, R. Br., *Diuris palustris*, Lindl., *maculata*, Sm., *longifolia*, R. Br. The genus *Pterostylis* is represented by numerous species. This aspect of the forest region applies to the Barossa Range, the most prominent near the coast. Other mountain ranges in the far north may present different features.

THE SCRUB LAND REGION.—The regions of the so-called scrub land appear over the whole area of South Australia, extending more or less in the different districts; but more so in the north and east, occupying about one-eighth of the whole area of the colony. They form long stretches of desolate arid plains—the soil being of the poorest description, and unfit for cultivation, changing from loamy clay to pure sand; the surface is covered with fragments of silicious rock, ferruginous sand, and ironstone; of water in these tracts there is no indication. The vegetation is of a stunted character, and the scrub is nearly destitute of grasses and other herbage; the few genera of the first are mostly *Neurachne*, *Stipa*, *Isolepis*, *Spinifex*, the well-known kangaroo grass *Anthistiria ciliata*, and a few *Juncaceae*, viz., *Xerotes glauca*, R. Br., and *filliformis*, R. Br.; and these grow only in tufts, considerably apart from each other. The absence of other herbage is as great during the summer; but this almost entire deficiency is compensated by an endless variety of genera and species of shrubs. The general impression given by the scrub is dismal, although the great variety of shrubby plants associated there make it highly interesting to the botanist. These shrubs reach generally the height of four to six feet, interspersed with stunted and ramified trees of the genera *Casuarina*, *Eucalyptus*, *Santalum*, *Melaleuca*, *Exocarpus*, *Camphoromyrtus*, *Dodonaea*, *Frenela*, *Banksia*, &c. Smaller shrubs of the genera *Pimelea leucopogon*, *Dillwynia*, *Hibbertia*, *Acrotriche*, *Calythrix*, cover the ground, and are overtopped by higher growing ones, such as *Hakea*, *Logania*, *Alyxia*, *Myoporum*, *Stenochilus*, *Euphrasia*, *Thomasia*, *Bursaria*, *Pomaderris*,



Botanical Garden - Cockatoo House on the Lake

Haloragis, *Melaleuca*, *Leptospermum*, *Eutaxia*, *Acacia*, *Isopogon*, *Correa*, *Rhagodia*, &c., forming sometimes impenetrable thickets; in other localities the scrub consists only of *Eucalyptus dumosa*, A. Cun.; sometimes formed by other bushy *Eucalypts*, viz., *Eucalyptus uncinata*, Turcz.; *bicolor*, A. Cun.; and *incrassata*, Labil., growing only six to eight feet high, and extending hundreds of miles.

The most predominant color of the leaves of the scrub is a glaucous green, interspersed here and there with whitish leaves of the *Rhagodia* and other shrubs, having reddish-brown leaves. Most of the leaves are ovate, entire, coriaceous, and pungent; shrubs with pinnated leaves are seldom met with.

The monotonous and dismal look of an extensive scrub is depressing, especially when viewed from an eminence. The equal height of the vegetation, the dull glaucous color of the foliage, look in the distance like a rolling sea reaching the horizon—at least the first sight of the Murray scrub, extending hundreds of miles, produced this impression on my mind. Everyone avoids the scrub as much as possible—many have lost their way there and perished for want of water.

All the scrubs in the different districts produce the same common impression, but the plants comprising them are not the same genera and species, locality and soil affecting the character of the flora.

Shrubs of one kind or another are found in flower in the scrub throughout the year. Most kinds produce their flowers in September and October; the rainy season therefore alters the physiognomy of the scrub very little; but it calls into life numerous terrestrial orchids, of which a good many kinds inhabit the scrub, viz.:—*Erochilus*, *Caladenia*, *Diuris*, *Prasophyllum*, *Dipodium*, *Microtis*, *Cyrtostylis*, &c. These appear with some perennial and annual plants, viz.:—*Helichrysum*, *Drosera*, *Helipterum*, *Scaevola*, *Brunonia*, *Thyssonanthus*, *Euphrasia*, *Goodenia*, *Hypoxis*, *Senecio*, &c., and annual grasses; but their duration is short, as with the setting in of the dry season they disappear as rapidly as they appeared.

A most valuable scrub plant, at least for the pastoral community, and appearing copious in the northern districts, is the so-called salt bush, *Atriplex nummularia*, R. Br., on which during the summer and in times of drought the sheep subsist. If all other vegetation is suffering from the drought, the salt bush alone withstands the intense heat of the sun and maintains its freshness, and saves thousands of sheep from starvation.

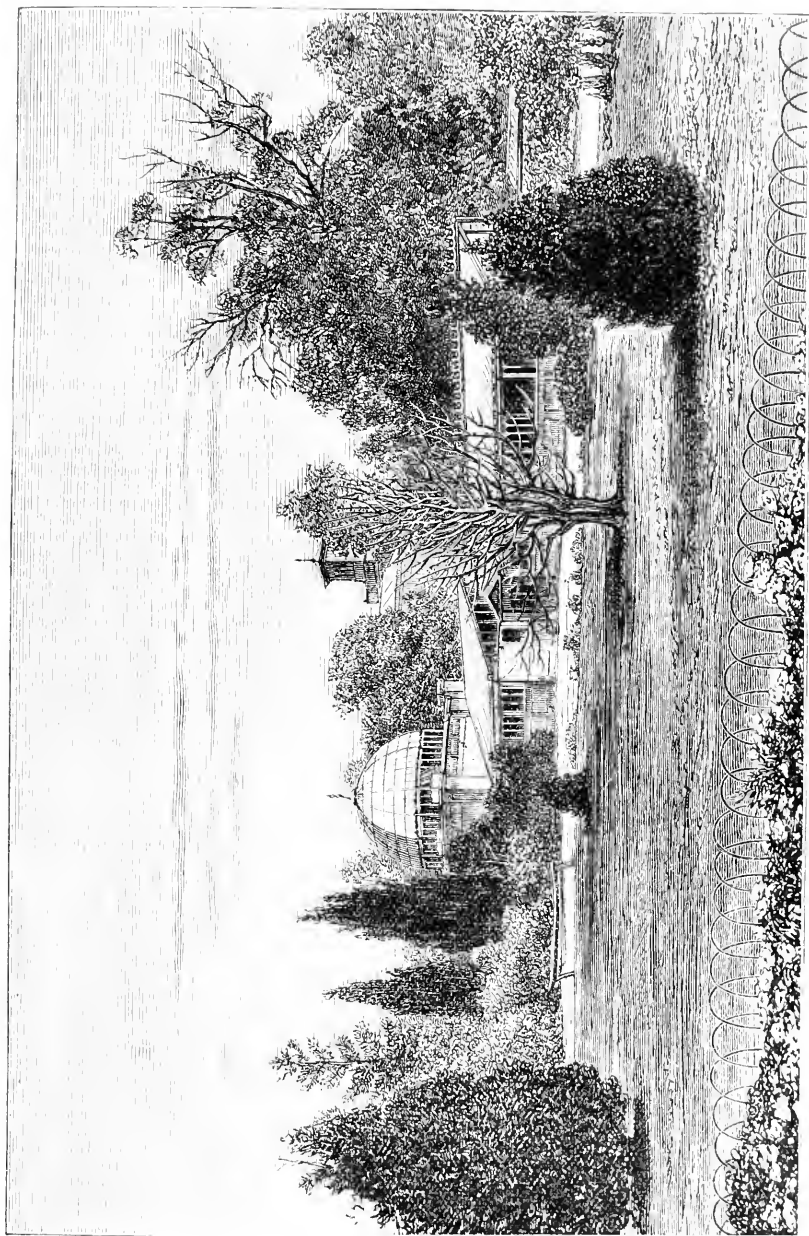
THE GRASS LAND REGION.—The so-called grass land forms the principal part over the whole area of South Australia, consisting in endless undulating plains, stretching from the coast towards the north and

east. Along the coast and hundreds of miles inland the grass plains have mostly disappeared, and now form agricultural districts producing the finest cereals known—the soil varying from the best to some indifferently good.

But the grass plains of the interior, especially towards the north, so extensive as to be lost in the horizon, are like deserts, emphatically monotonous and desolate. Only here and there will be found some fertile spots of grass land, but not of large extent, alternating with bare sandstone ridges or rolling sandhills, interspersed with gravelly and waterless flats. Their surface is often saline, covered with sharp angular or weatherworn fragments of various sizes of ironstone, quartz, reddish-colored sandstone, and conglomerate, supporting only a scanty herbage of *Atriplex*, *Kochia*, *Salicornia*, and *Salsola*, *Spinifex* and other perennial grasses, growing in tufts, tinging the sandy surface. Groups of stunted shrubs and small ramified trees, sometimes of a limited extent, rise from the plains like islands of the ocean. They mostly consist of the shea-oak, *Casuarina stricta*, Ait., *glauca*, Sieb., and *distyla*, Vent., *Euclyptus odorata*, Behr., *dumosa*, A. Cun., *virgata*, Sieb., wattle, *Acacia pycnantha*. The plains near the coast are of a different character, the soil mostly fertile, extending often to the sea, and constituting a great part of our arable land.

The stratum of humus or fertile soil covering these plains occasions also an essential alteration in their vegetation. The grasses consist of more nourishing kinds, viz. :—*Poa*, *Panicum*, *Festuca*, *Agrostis*, *Airia*, *Andropogon*, *Cynodon*, *Stipa*, *Pennisetum*, *Bromus*, *Eriachne*, *Anthis-turia*, *Hordeum*, &c. Here appear also a great number of low-growing shrubs, such as *Bursera*, *Grevillea*, and small ramified trees of peppermint, *Myoporum*, *Pittosporum*, *Casuarina*, and *Acacia*, either single, or sometimes forming groves, without underwood, like oases in the desert. The banks of the rivers and creeks, which mostly cease running during the summer, are lined with majestic gum trees, often of immense dimensions, and shrubs, extending more or less upon the plains, according to the nature of the soil. This vegetation, on both sides of the rivers, appears like green ribbons, following their curves. These banks have their peculiar flora; here appears *Viminaria*, *Leptospermum*, *Melaleuca*, *Myoporum*, *Hardenbergia*, &c.; herbaceous plants, *Sium*, *Mimulus*, *Myriogyne*, *Senecio*, *Lobelia*, *Petroselinum*, *Eryngium*, *Lotus*, and the following *Juncaceae* and *Graminæe*—*Juncus*, *Luzula*, *Xerotes*, *Neurachne*, *Deyeuxia*, *Stipa*, &c.

The grass land, in fact the whole configuration of the plains, has a great similarity to the savannahs of British Guiana. Naturally there is a great discrepancy with regard to the two vegetations; but the savannahs



Botanical Garden – The Conservatory.

have mostly the undulating ground, the scattered ramified trees, the oases, the rivers lined with a green belt; and the appearance of the grasses and herbage covering the area has, during the dry season, the same sunburnt yellow character, and is destitute of all green herbage. After the setting in of the rainy season, there is the same magic appearance of the grasses and herbage.

In the month of May the rainy season generally commences, which has a magical effect upon the herbage of the plains; a few heavy showers change the aspect of the dried-up grasses and herbage into a green and beautiful carpet.

The rapidity with which especially the annual grasses spring up is such that in a few days the plains appear clothed with luxuriant verdure, which only northern countries ordinarily produce. With the grass are also recalled to new life the yellow flowers of *Ranunculus aquatilis*, Lin., *lappaceus*, Sm., *ricularis*, Banks, *Oxalis cognata*, Steud., *Hypoxis glabella*, R. Br., with the white flowers of *Drosera rosulata*, Lchm., the blue of the *Wahlenbergia gracilis*, Dec., *Anguillaria biglandulosa*, R. Br., *Stackhousia obtusa*, Lindl., with its perfume-spreading flowers.

Every week adds new colors to the beautiful carpet. The scarlet flowers of *Kennedyia prostrata*, the violet ones of *Swainsona procumbens*, F. Muell., and *lessertifolia*, Dec.; the delicate flowers of *Thysanotus Patersoni* climbing up the dry grass stalks, or overrunning small shrubs. The flowers of the isolated trees or copses of the wattles soon glitter in their yellow clothing. The *Loranthus Exocarpi*, Behr.; and *Miqueli* Lchm., growing parasitical of the *Cusuarinas* and *Eucalyptus odorata*, adorned with their red flowers hanging in the air. The small shrubs of *Bursera spinosa* are covered with their white flowers, mingled with the red of different shrubby *Grevilleas*. *Compositae* are seen blooming over the plains in all colors; and every week brings new representatives of floral beauty.

But by the middle of November the number of flowering plants already lessens considerably, the annual grasses and other herbaceous plants begin to dry up, droop, and disappear, and in January the grass land resembles a ripe thinly-sown cornfield, and we find only solitary shrubs covered with a few flowers or a few plants of *Convolvulus crubescens*, *Lobelia gibbosa*, Labil, the latter with their leafless and fleshy stalks, and *Mesembryanthemum Australe*, Soland. In some localities this period appears earlier or later.

The seeds of the annual plants have been scattered, perennial herbage returned to its dormant state, to awake to new life at the setting in of the following rainy seasons; and the plains have during the summer months a dismal dried-up appearance.

There is another kind of grass land, appearing here and there in large tracts, called " Bay of Biscay land." Such tracts have a peculiar, undulating surface, and look like a waving sea which has suddenly become motionless. The soil is considered very good, of a chocolate color, and produces fine wheat crops, but it must be ploughed several years before the surface becomes level.

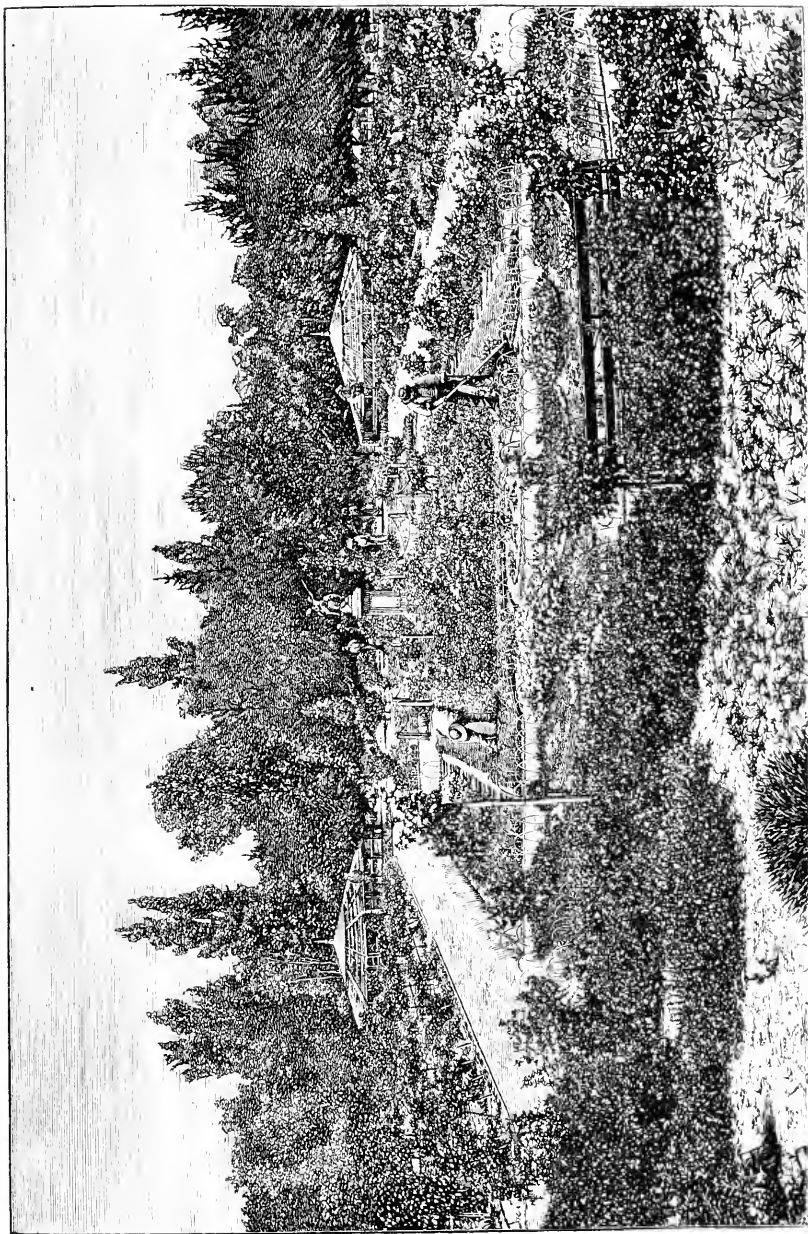
The flora of the Bay of Biscay land, too, has its peculiarity. The *Eucalypts* shunning such tracts, which, however, are rich in *Compositae* and grasses, but poor in *Monocotylelons*.

The seabeach is mostly bordered with a belt of arborescent shrubs and small trees of ramified growth, viz. :—*Melaleuca Preissiana*, *Schau, decussata*, R. Br., *Alyxia*, shrubby *Eucalypts*, *Myoporum*, *Pittosporum*, and *Santalum*, interrupted with a thick belt of *Avicennia officinalis*, Lin., extending along the coast. The sandy, often saline, tracts stretching towards the plains are covered with *Atriplex*, *Tetragona*, *Aster*, *Apium*, *Euphrasia*, *Zygophyllum*, *Nitraria*, *Erigeron*, *Cotula*, *Podolepis*, *Erodium*, *Helichrysum*, *Leptorhynchus*, *Dianella*, *Arthropodium*, *Salsola*, and *Mesembryanthemum*, which are often supplanted by tracts of *Spinifex*, *Xerodes*, *Juncus*, *Anthistiria*, *Lepidosperma*, *Isolepis*, *Chaetospora*, *Claudianum*, and *Carex*.

INTRA-TROPICAL REGION.—According to G. W. Goyder, Esq., Surveyor-General, the country, especially near the coast, of the intra-tropical part of South Australia consists principally of table land of from 60 to 150 feet above the level of the sea, falling thence gently towards the sea, although forming here and there into cliffs, which are fringed with dense thickets of various-sized timber, matted together with bamboo, and a variety of climbing plants and shrubs. The low lands near the sea, especially such as are under the influence of the tide, are covered with dense mangroves, *Avicennia officinalis*, Lin., and *Rhizophora mucronata*, Lam. These, as the land ascends to a higher level, give place to palms, *Pandanus*, *Melaleucas*, *Leptospermums*, *Grevilleas*, *Eucalypts*, and *Acacias*, forming an open forest. Amongst the underwood are found ferns, *Aroids* as *Amorphophalus campanulatus*, *Decas*, and *Taccaceae*, *Tacca Pinnatifida*, Lin.

The grass over the whole, or nearly the whole, of the surface of the ground, grows luxuriantly, of which the most prominent genera are the following:—*Fuirena*, *Cyperus*, *Eleocharis*, *Cimnapogon*, *Fimbristylis*, *Panicum*, *Setaria*, *Sporobolus*, *Anthistiria*, *Eriachne*, &c. The soil is mostly good, and of a dark-brown color, with small nodules of ferruginous sandstone upon the surface.

Near the sea, and generally upon a watercourse near its junction with the sea, swampy flats occur, containing timber of large growth and rank



Botanical Garden—The' Rose Garden.

vegetation. The lakes and waterpools are covered with waterlilies, *Nymphaea gigantea* and *Nelumbium speciosum*, Willd., showing their beautiful flowers in various shades of blue, pink, or crimson. The flats on either side of large rivers also contain good soil, except where they join the higher land, where there is a belt of sandy character, poor to look at, though covered with timber and grass. The same kind of open forest, undulating and flat land, exists over the area, sometimes the soil, changing suddenly from a dark brown to a very light loam, the soil improving and the vegetation along the rivers becoming luxuriant.

Judging from the plants collected by Mr. Schultz, who was employed for about two years there as a naturalist, during which time he obtained about 700 species of plants, the inter-tropical flora of South Australia does not present the luxuriant growth and umbrageous foliage we are used to see in other tropical floras. The number of species is also very small, owing, no doubt, to the dryness of the climate; and from the same cause it is deficient in *Epiphytal Orchids*, palms, and ferns. *Acacias*, *Eucalypts*, *Ficus*, *Bombax cupania terminalea*, *Psychotria*, *Grevillea*, form the prevailing timber trees, and line the rivers; but the *Eucalypts* and *Acacias* do not reach the gigantic size of their brethren in the extra-tropical region. The following orders are well represented, viz.:—*Euphorbiaceae*, *Compositae*, *Convolvulaceae*, *Rubiaceae*, *Goodenociaceae*, *Leguminosae*, *Urticeae*.

The representatives of the intra-tropical flora of South Australia seem to extend towards the east, as a great number of genera and species reach to the Gulf of Carpentaria, and even further. A great many species of the Indian flora appear along the coast of the intra-tropical part, viz.:—*Strychnos*, *Tamarindus*, the Cajaput tree, *Melaleuca leucadendron*, appear abundant along the banks of the rivers, and even over the dry sandstone table land, but of less luxuriant growth.

(From the Botanic Garden Report.)

THE INTRODUCED PLANTS IN OUR GARDENS AND FIELDS.

Although having for several years back published a condensed sketch on the subject, more facts derived from experience have been since collected, which are added to the previous sketch, and will no doubt interest the foreign recipients of this report. For these I think it also necessary to give, first, a brief description of our seasons and climate in general, its

extremes, and the difficulties we have to contend against with regard to acclimatising introduced plants, especially those from tropical, frigid, or alpine zones; and the plants from other parts of the globe which will become accustomed to our climate, and will thrive out of doors.

Our summer season includes the months of December, January, and February, when the temperature on the plains frequently exceeds 100° in the shade, and reaches from 140° to 150° in the sun. In 1876 the thermometer registered, in December, $114^{\circ} 2'$ in the shade, and $162^{\circ} 6'$ in the sun. This degree of heat has only been exceeded on two former occasions, viz., in 1865, when the thermometer registered, on the 9th January, $116^{\circ} 3'$, and on the 14th January, 1862, when the reading was 115° in the shade and 165° in the sun; but the maximum in the sun hitherto recorded was on the 18th January, 1882, when the temperature registered in the sun was 180° , and 112° in the shade, the former being, without exception, the highest ever recorded. As the boiling-point is 212° , it will be seen that the heat in the sun on the 18th January, 1882, was within 32° of that temperature. Such temperatures produce very injurious effects on the introduced plants, especially those from cooler climes, and leaves even injurious traces on the native vegetation.

During the blowing of hot winds, the thermometer and the wet-bulb thermometer often show a difference of 30° to 40° , and it is that which enables persons to bear the heat of our summer and carry out their usual pursuits in the field, or elsewhere, which, in a tropical climate, would be impossible.

The changes of temperature during the summer are often very sudden, so that in a short time the thermometer falls from 90° or 100° to 70° or 60° .

Our summer months are characterised by great heat, hot winds, and dryness. Not a drop of rain falls often for six or eight weeks, and it is during this time that not only the acclimatised but the indigenous vegetation suffers materially. The ground becomes so hot and cracked that even the occurrence of a fall of rain serves only to clear the leaves from dust, as it again evaporates in a very short time.

During this period the country wears a desolate, sunburnt appearance, and is destitute of all green herbage; but after the setting in of the rains, there is, I may say, a magic appearance of grasses and herbage.

The autumn season includes in Australia the months of March, April, and May, and is one of our genial and beautiful parts of the year. The temperature falls rapidly, only reaching 70° to 80° in the shade, the mean being $64^{\circ} 6'$, and in the month of May it is only $58^{\circ} 2'$. The northern winds become cooler, the solar radiation is considerably re-



Botanical Garden—Medicinal Plants Plantation and Keeper's Cottage.

duced, and heavy dews begin to fall at night. The indigenous vegetation which has suffered through the summer awakes to new life, and trees, shrubs, and herbage put forth fresh growth, while the leaves of the European deciduous trees get the autumnal tints, and drop.

June, July, and August constitute our winter—our rainy season—which is usually marked by frequent rain and strong winds: but it also often happens that we have to contend with remarkably dry winters, the mean temperature during the three months 54° to $55^{\circ} 7'$. Hoar frosts and heavy frosts often appear during the night, which have since the last four years increased in severity, and the lowest temperature experienced was 28° at least in the Botanic Garden. Such heavy frosts have most disastrous effects upon the tropical and subtropical plants in the garden.

The spring season—the most genial and most beautiful in South Australia, I think not surpassed in any other part of the world—includes the months of September, October, and November, the mean temperature during the first two months being 60° to 70° ; at this time of the year the gardens are in their best floral beauty—trees, shrubs, perennials, annuals emulate each other in regard to their flowers, which are of such a size, richness in color, and perfection, as a northern gardener can scarcely imagine. But early-appearing hot winds in November destroy these floral beauties in the course of a few hours.

The average fall of rain during the year in the plains of Adelaide is twenty-one inches, but the distribution is unequal, even in places not far apart, each often showing a great difference in the rainfall. In the Mount Lofty ranges, about eight miles distant from Adelaide, the average of the rainfall is 40.677 inches. The lowest rainfalls have been in 1850, when only 11.644 inches fell; in 1859, 11.647 inches; in 1857, 12.650 inches; in 1854, 13.437 inches; in 1871, 14.926 inches; and in 1882, 15.742 inches. The highest fall near Adelaide was in 1875, when 31.455 inches fell.

This climatic sketch refers only to the plains round Adelaide. In the southern parts and in the hills the temperature is much cooler, and the rainfall, as already mentioned, much heavier, but in the northern districts the rainfall is much less. From the foregoing it can be imagined that not all plants from other countries will grow with us. The tropical and alpine ones suffer not only from our dry atmosphere, but the former also from the cold during the winter months. In the hill gullies the alpine plants, and those of other cool countries, grow exceedingly well, while the tropical ones are destroyed by the frosts, which in such localities are even severer than on the plains.

Not many European and North American forest trees prosper with us in the plains; only the Elm, Plane, Ash, Poplar, and Willow thrive

vigorously, while the Oak, Lime, Birch, Horse-chestnut, and Maple thrive only slowly, and suffer materially from the drought. All attempts to grow the beautiful Beech tree in the plains have failed, and even in the gullies of the hills it only grows slowly, while the other trees mentioned thrive most luxuriantly in those localities. It is the same with the coniferous trees. The most vigorous-growing European pines on the plains are only the Aleppo pine, *Pinus halepensis*, Ait., Cluster pine, *Pinus Pinaster*, Ait., the Italian stone pine, *Pinus Picea*, Linn.. All other kinds only show a moderate growth. The Scotch fir, *Pinus sylvestris*, Linn.), the Corsican pine, *Pinus Laricio*, Poir., are of a lingering growth, while the larch, *Pinus Larix*, Pall. succumbs to the slightest hot winds and drought. Of this fine tree I have not met with a single specimen in South Australia.

Of the Californian conifers, only such as appear at an elevation of 500ft. to 1,000ft. do remarkably well in the plains of South Australia, especially the showy pine *Pinus insignis*, Dougl., which often reaches, in the course of from fourteen to sixteen years, a height of 50ft. to 60ft. Sabine's pine *Pinus Sabiniana*, Dougl., Bishop's pine *Pinus muricata*, Don., the elegant Weymouth pine *Pinus Strobus*, Linn., shows only a lingering growth with us.

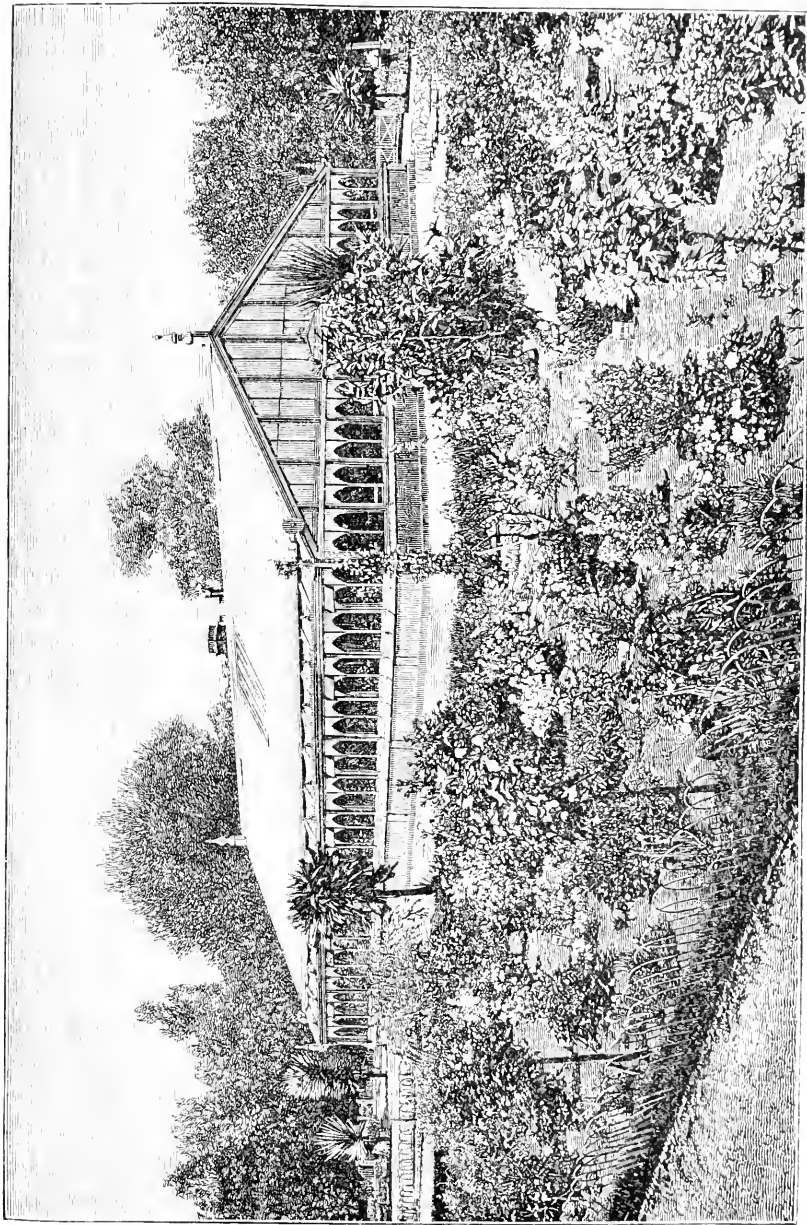
Some of the Californian and European *Cupressus* and *Thuyas* also thrive luxuriantly, although some species of the former seem to have a short duration of life in South Australia, especially the quick-growing *Cupressus macrocarpa*, Hartw., which, after a very rapid growth, dies suddenly when about twelve to sixteen years old. The same is the case with Lawson's cypress (*Cupressus Lawsoniana*, Murray), *Cupressus sempervirens*, *thurifera*, and even the Himalayan Bhotan Cypress (*Cupressus torulosa*, Don.) delight in our climate.

The *Thuyas* are also of slow and stunted growth.

The mammoth tree (*Wellingtonia gigantea*, Lindl.) does not delight in our climate, although growing tolerably well the first years; but later on it ceases to grow and dies slowly, although the Californian Redwood (*Sequoia sempervirens*, Endl.) grows well.

The Canadian pine (*Pinus Canadensis*, Willd.) also is a very quick-growing pine with us.

Very few of the so handsome Himalayan conifers prosper in the plains, especially such as appear at an elevation of 6ft. to 8,000ft., viz. : —The Indian Spruce Fir (*Abies Smithiana*, Loud.), the Indian Hemlock Spruce (*Abies Brunoniana*, Lindl.), Menzie's Spruce Fir (*Abies Menziesii*, Loud.), the lofty Bhotan Pine (*Pinus excelsa*, Wall.), the upright Indian Silver Fir (*Picea Pindrow*, Loud), Webb's Indian Fir (*Picea Webbiana* Loud.), Gerard's Pine (*Pinus Gerardiana*, Wall.), &c. Their growth is



Botanical Garden—"Victoria Regia" House.

very slow, and in a few years they succumb to the drought and hot winds; only the Deodar or Indian cedar (*Cedrus deodara*, Loud.), and the long-leaved pine (*Pinus longifolia*, Roxb.), flourishing well with us, although in their native state appear at 6,000ft. to 12,000ft. of elevation.

Still more doubtful is the existence of the Japanese and Chinese conifers. None will prosper luxuriantly out of doors with us. All the species of the following genera, viz.:—*Thuyopsis*, *Retinosporu*, *Chamaecyparis*, *Cryptomeria*, *Cunninghamia*, are of a stunted and lingering growth, and much injured by hot winds and droughts. The remarkable umbrella pine (*Sciadopitys verticillata*, Siebold) can scarcely be kept alive indoors.

None of the *Taxus* species, may they be natives of Europe, America, Asia, or India, thrive in the plains, but show a lingering and stunted growth. It is the same with the South American *Araucarias*, viz., *A. imbricata*, Pav., and *Brasiliana*, Lamb.

Although some of the Junipers become acclimatised here, the trees do not reach the size we are accustomed to see at home.

I have already pointed out that some of the tropical trees and shrubs do not object to our climate, and thrive tolerably well. I will only mention the most noteworthy, viz.:—

Paulownia imperialis, Siebold, Japan
Laurus camphora, Willd., Japan
Broussonetia papyrifera, Vent., Japan
Stylingia sebifera, Michx., China
Aralia papyrifera, Hook., China
Ficus Roxburghii, Wall, E. India
religiosa, Linn., E. India
Ficus sycomorus, Linn., Egypt
Jacaranda mimosacfolia, Don., South America
Koeberuteria paniculata, Laxm., China

Sophora japonica, Linn., Japan
Eriobotrya japonica, Lindl., Japan
Ficus Bengalensis, Linn., India
Ficus elastica, Roxb., E. India
twida, Ait., E. India
Schinus Molle, Linn., Peru
Psidium littorale, Rodd., S. America
Viburnum Chinense, Leigh, China
Schotia latifolia, Ekl., S. Africa
Ceratonia siliqua, Linn., Levant

But the handsome Japanese maple (*Acer polymorphum*, Spach), in its numerous varieties, despises our climate on the plains entirely. They will not even grow in our shade-houses.

The following tropical flowering shrubs thrive well with us in the open air, viz.:—*Erythrina*, *Raphiolepis*, *Bauchinias*, *Lagerstroemias*, *Guilandina*, *Brugmansia*, *Bignoni*, *Tecom*, *Hibiscus*, *Lantanas*, *As-trapaea*, &c.

The Chinese, Japanese, East Indian, and North American alpine plants, viz.:—*Camellias*, *Rhododendrons*, *Azaleas*, *Gaultherias*, *Andromedas*, *Clethras*, &c., as already mentioned, will not stand our dry and hot summer out of doors, but find a congenial climate in the gullies among the hills, at an elevation of 1,000 to 2,000 feet, where they reach perfection.

The plants of the Cape of Good Hope flora grow mostly well with us. Very few Palms acclimatise in South Australia out of doors. Of the African Palm flora, the Date Palm (*Phoenix dactylifera*, Linn., *Phoenix reclinata*, Jacq., *Chamaerops humilis*, Linn.) prosper with us.

From the South American Palm flora, *Jubaea spectabilis*, Humb. and Bonpl., *Sabal Blackburniana*, Glzbr.; from Asia, *Chamaerops Furtunei*, Hook., *Corypha Gebanga*, Bl., grow satisfactorily. Even of the palms of tropical Australia only *Corypha Australis*, R. Br., grows with us in the open air. The Cape of Good Hope *Encephalartos*, viz.: —*Encephalartos villosus*, Lehm.; *E. Lehmanni*, Eckl.; *E. Cycadifolius*, Lehm.; *E. horridus*, Lehm., thrive out of doors. Also the tropical Australian *Macrozamia*s.

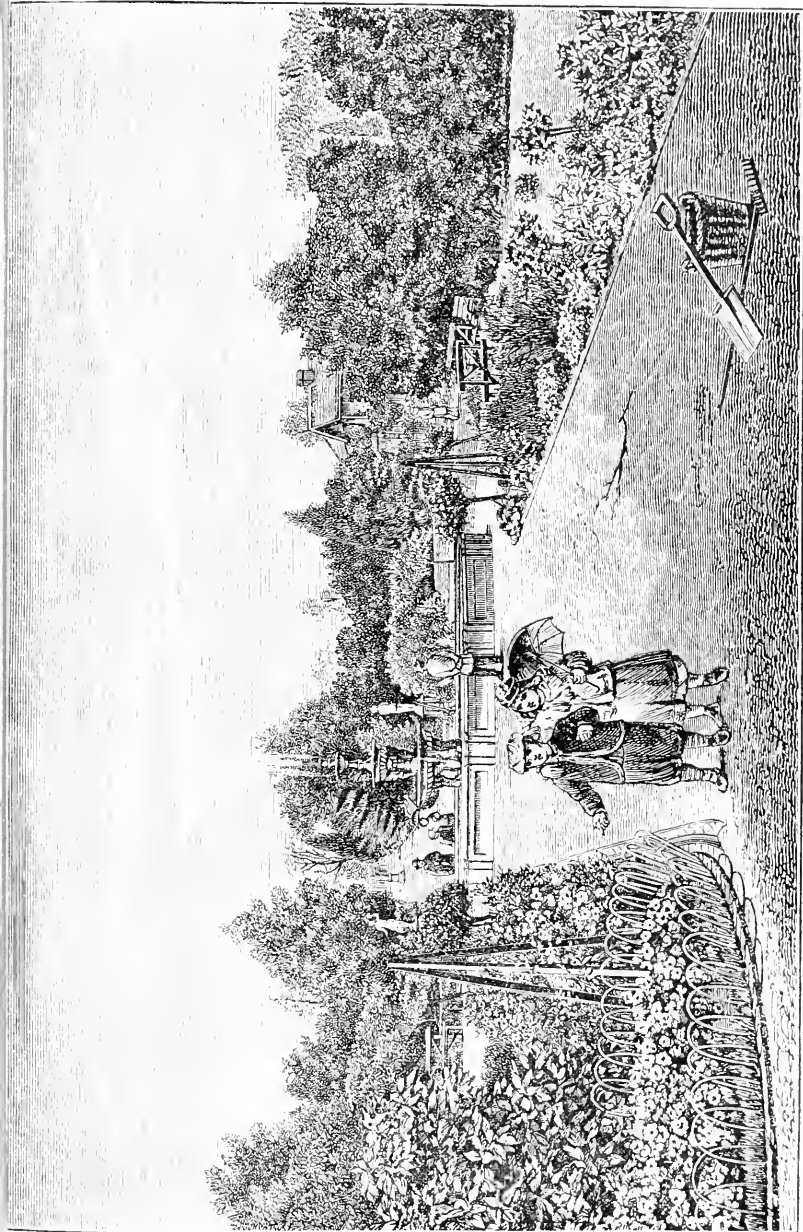
The South Australian climate suits all the succulent plants, which develop out of doors to great perfection, especially *Yuccas*, *Aloes*, *Opuntias*, *Rhipsalis*, *Pereskia*, *Cereus*, and *Echinocactus*. *Agave Americana* and *Fourcroya gigantea* grow to an immense size and generally produce their flower in the tenth to twelfth year after planting, their flower-spike reaching the height of thirty to forty feet.

Only the smaller kinds of the *Mamillarias*, *Epiphyllums*, want protection in summer from the scorching sun, and in winter from the heavy rains.

The growth and well-doing of the perennials, more particularly those of cooler climes, are very problematical. Only such as root deeply in the ground will withstand our dry summer.

We do not succeed in the plains with the perennial *Phloxes*, although the annual *Phloxes* do remarkably well, even throughout the summer months. *Delphiniums*, *Campanulas*, *Aconitums*, *Rudbeckias*, and *Thalictrums*—in fact most of our handsome European perennials, succumb to our summer; but it is the reverse with the annuals, which generally grow most luxuriantly during the winter and part of the spring months, and arrive at great perfection, especially the stocks, which reach an extraordinary size; but our climate is fatal to the handsome and favorite autumn flower, the China Aster, which even in a very favorable season will only produce small and insignificant flowers, and, strange to say, all the endless varieties, viz., Quilled, Victoria, Paeony-flowered and Chrysanthemum Asters go back to their original type. The Balsams will not grow out of doors, and even under glass they do not form the bushy plants we used to see them at home, but draw too much, and form only single stem.

The so handsome Dahlias will not prosper in the plains, the flowers being small, and suffering from the slightest hot winds, but in the hill gullies they attain perfection.



Botanical Garden—The Centre Walk.

Indeed the aspect of our gardens during the summer months would be a very dreary one if it were not for the *Petunias*, *Verbenas*, *Zinnias*, *Tagetes*, *Amaranthus*, *Gomphrenas*, *Portulacas*, *Chrysanthemums*, and *Zonale Pelargoniums*. These develop their flower, with a little help of water, to a perfection unknown at home. Of the splendor of the Oleander, which is in bloom during the summer months, no northern gardener can have any conception. The masses, size, color, and fragrance of the flowers surpass those produced in their native country.

The Roses will attain similar perfection if we have a favorable season, but this does not often happen. The Roses have to contend against two great enemies, viz., the hot winds and the rose blight. The latter scourge can be mitigated by cleaning, but we have no remedy against the hot winds. The flowers and even the small buds are destroyed by only moderately hot ones. The dark-colored flowers suffer most, and in a few hours appear as if a fire had passed over them.

Bulbous and tuberous plants from the Cape of Good Hope thrive with us as vigorously as in their native country, chiefly *Gladiolus*, *Brunswigias*, *Haemanthus*, *Watsonias*, *Ixias*, *Babianas*, *Ornithogalums*, *Trichonemas*, *Tritonias*, *Antholyzas*, *Lachenalias*, *Moraeas*, &c.; so also do *Hippeastrums*, *Amaryllis*, *Crinums*, *Pancratiums*, *Alstroemerias* from any part of the globe. Not so, however, the *Liliums*. Only *Lilium candidum*, Linn., *L. longiflorum*, Humb., and *L. eximium*, Siebol., thrive out of doors, while all the other species, especially those from Japan, will not prosper. Even the handsome *L. auratum*, Lindl., will not thrive in pots, but otherwise is the case in the hills.

The same dislike to our climate has the Crown Imperial (*Fritillaria Imperialis*, Linn.), which never produces flowers, and the bulb dies within a year or two after its introduction.

The Hyacinths and Tulips also find our climate in the plains unsuitable. The Tulip bulbs will produce flowers for a year or two, but they gradually dwindle away after the second year.

Hyacinths produce good flowers the first two or three years, but afterwards the bulbs divide into numerous offsets, which produce no flowers until they are separated and planted, requiring two to three years before they flower and again divide into numerous offsets.

Of the many Crocus varieties, only the yellow one will produce flowers; all the other, blue, white, &c., never come to perfection.

Sternbergia lutea, Ker., comes to great perfection with us.

The Ranunculus and Anemones produce during the first two or three years splendid flowers, but the Anemone tubers show the same decay as the tulips, and frequently dwindle away the second or third year.

All the various kinds of *Narcissus* delight in our climate, with the exception of the variety of the *Narcissus poeticus*.

In the plains it is impossible to grow ferns out of doors in the open ground, not even the few South Australian species which are found growing in the hills and gullies, unless planted in very shady, moist, and protected places.

Of inter-tropical fruits only a few kinds prosper with us, viz. :— The Loquat (*Eriobotrya japonica*, Lindl.), Guavas (*Psidium pyrifera*, Linn., and *pomiferum*), and bananas partially. Even the pineapple must be grown under glass.

Most of the fruits from other parts of the globe thrive luxuriantly in South Australia, and come to such perfection in size, and frequently in flavor, as is hardly known in other countries, and many fruits are found to improve materially by the change, the climatic conditions being manifestly favorable to them.

On the plains grow Apples, Pears, Apricots, Peaches, Nectarines, Medlars, Oranges, Citrons, Lemons, Plums, Cherries, Figs, Quinces, Mulberries, Almonds, Olives, and Grapes; while in the hills and gullies are also grown Strawberries, Gooseberries, Currants, Raspberries, Walnuts, Chestnuts, and Filberts to great perfection.

The Apples grow to a great size, but do not always possess the same fine flavor as at home, and contain more acidity. The apple-trees suffer much from the attack of the American blight, for which no radical remedy is at present known. The trees which grow in the hills or in very rich soil suffer most, and at last succumb to this scourge.

The Pears grow to perfection, and maintain the same flavor as in the old country.

The fruits of the Peaches, Apricots, and Plums reach to a large size, and contain a good flavor. The Cherries do not attain the perfection and flavor of those at home. All the stone fruit producing trees are shortlived, especially those of the Peach, Plum, and Apricot, which scarcely live fourteen to sixteen years. This early decline may be owing to the quick luxuriant growth and early excessive bearing of fruit, circumstances which produce over-stimulation and early exhaustion.

The finest grapes are grown on the plains and the slopes of the Mount Lofty range facing the plains. Here they grow to a great size, and the summer months ripen them to the greatest perfection. The wine produced often contains 25 to 30 per cent. alcohol. No doubt the South Australian wine must obtain a character in foreign markets.

For the last nine years the *Oidium* has made its appearance in our vineyards, but not with such damaging results as in Europe. Also the *Phylloxera* has appeared in the vineyards of our neighbor colony, Vic-

toria, in an alarming way, and a good many vineyards have already been destroyed. From this it will be seen that the Australian vignerons, like the European, have to contend against the two greatest scourges which can invade a vine-growing country.

The cultivation of the Olive is a great success, and the oil is considered perfect.

All vegetables can be grown during winter and autumn on the plains, but in no comparison so successfully as in the gullies of the hills, where the finest vegetables and other culinary herbs are raised throughout the year in great abundance. Cauliflowers about two feet in diameter are often seen in the market: Cabbages, Turnips, Asparagus, Artichokes, Leeks, Onions, Beet, Carrot, Endive, Rhubarb, Lettuce, Celery, Cucumbers, Sweet and Water Melons, and Pumpkins growing to an extraordinary size, and of good flavor.

Cucumbers, Water and Sweet Melons, grow most luxuriantly in virgin soil, but if grown on the same spot several years running (although manured) the fruit degenerates in size and flavor, and ultimately fails altogether.

The South Australian cereals, especially the wheat, which is considered to be the finest grown in the world, are pretty well known.

When a new-comer visits for the first time our agricultural and horticultural shows, and observes the fine display of flowers, fruits, vegetables, and cereals in their utmost perfection, he must consider South Australia a favorable land; and it is indeed surprising that our fickle climate, with its extremes, drought and hot winds, can produce such developed specimens of Nature's gifts.

CHAPTER XXII.

THE NORTHERN TERRITORY.

Its discovery—Early explorers—The Portuguese—The Dutch—Torres—Modern explorers—Cook—Flinders—King—Stokes—Raffles Bay—Melville Island—Port Essington—Buffaloes—Timor ponies and cattle—Gulf of Carpentaria—Adam Bay—Adelaide River—Port Darwin—Anson Bay—Gulf of Cambridge—Victoria River—Leichardt—The Roper and other Rivers—Gregory—The Table Land—Cooper's Creek—Stuart's explorations—Crossing the continent—Annexation of the Northern Territory to South Australia—Settlement at Adam Bay—Government Resident recalled—McKinlay sent up—Narrow escape of him and his party from destruction by floods—The settlement abandoned—Captain Cadell's expedition—Goyder's survey—English and order holders demand return of their money, and get it—Transcontinental telegraph—Port Darwin settlement—Gold diggings and mania—Regular mining—Tin—Copper—Agriculture—Cotton—Sugar—Pastoral interest—Horses—Land regulations—Appearance and formation of country—Navigable rivers—Trees—Animals—Climate—Coolie labor—Progress—Tariff—Revenue.

ABOUT eighteen or twenty years ago it was stated that, among the official or scientific archives of Lisbon had been found maps and journals, from which it appeared that the Portuguese were the first navigators who visited the north coast of Australia, their visit being assigned a date more than a century earlier than that of the Dutch explorers, who first saw the coast in 1606. It was further reported that these Lisbon records stated that the Portuguese found gold near a harbor, which from the description of the locality must have been Port Darwin. The Spaniards were contemporary with the Dutch, for Torres passed through the straits which bear his name in 1606. The Dutch continued their coasting discoveries for the next twenty years, and to them is owing much of the geographical nomenclature of the north and west coasts of Australia. Captain Cook made the world much more familiar with the northern coast of New Holland by his voyage in 1770, when he passed through Torres Straits, and demonstrated the safe and easy navigability of what has become one of the world's great highways of commerce. Flinders explored the Gulf of Carpen-

taria in 1801. Captain King in 1819 cruised about the coast, and discovered and named Cambridge Gulf, into which the Victoria River debouches. He also named Point Pearce, on its eastern shore and at the mouth of the Gulf, and discovered Liverpool River, about half way between Van Diemen's Gulf and the Gulf of Carpentaria.

In 1825 Sir Gordon Bremer took possession, in the name of His Majesty King George IV., of Raffles Bay, at Coburg Peninsula, north of Van Diemen's Gulf; and, passing on to the westward, formed a military settlement on Melville Island, which was abandoned five years later. The island has been neglected ever since, though it is an Anglo-Australian possession, and excursionists from Port Darwin occasionally visit it, principally for the amusement of buffalo-shooting. In 1827 troops and convicts were sent from Sydney, under command of Captain Barker, who was afterwards killed by blacks at the mouth of the Murray, to form a settlement at Raffles Bay, but two years later this place was abandoned, and ponies, cattle, and buffaloes were left to breed. The buffaloes increased to thousands, and wild ponies are said to have been also seen in that part of the country, and it also appears that the cattle survived and bred. Lately persons have made a business of hunting and shooting these buffaloes and cattle for their hides. Port Essington, lat. $11^{\circ} 10'$ S. long. $130^{\circ} 5'$ E., a few miles to the west of Raffles Bay, was next chosen by the British Government for occupation as a naval station, and on its western shore H.M.S. *Alligator* and *Britomart* landed troops and colonists. The harbor was landlocked. Like Raffles Bay, the position was unhealthy, and the mortality was very great. In 1849 this spot was deserted, more live stock being left behind. In 1839 Captain Stokes, by his careful explorations, added greatly to our knowledge of the north coast. He visited Port Essington, discovered and named Adam Bay, the Adelaide River (up which he proceeded for eighty miles), Port Darwin, the Victoria, and the Fitzmaurice rivers. In the following year he explored the west coast of the Gulf of Carpentaria: but it was reserved for Leichardt, the explorer, whose fate on his last expedition still remains wrapt in mystery, to discover the Roper, the Wickham, and other rivers. The Flinders and Albert rivers, discovered in this Gulf by Stokes, are in Queensland territory.

Leichardt, in his great expedition from Moreton Bay to Port Essington and to Van Diemen's Gulf in 1844, explored much of the Northern Territory now possessed by South Australia, and published accounts of his travels in the new country. In 1847 he started on his journey, from which neither he nor any one of his party ever returned, though there have been all sorts of fictitious reports as to relics of the lost travellers having been found and of grey-bearded white men—supposed to be some of the long lost explorers—having been seen among the natives. In 1858 Mr. Augustus Gregory found the letter L, of large size, cut on a tree about the Victoria River, and some camp-poles strewn about near by. On this trip Mr. Gregory crossed the Territory from the Gulf of Carpentaria and the Roper to the Victoria, and traced the watershed for most of the distance from east to west. He then struck to the south, and coming on a stream followed it down till he found it to be identical with Cooper's Creek, discovered by Sturt in 1845, and thence he pushed on into the settled districts of South Australia, and through them to Adelaide. The country about Cooper's Creek has long been occupied by squatters, with their flocks and herds.

After Gregory's great journey, Mr. Stuart, who had been in Capt. Sturt's expedition, and had made frequent excursions into the far north, was determined to cross the very centre of the continent from north to south. He made three or four attempts, but at last, in 1862 he reached the Indian Ocean. He supposed that he had struck the Adelaide, and then turning to the eastward a little, came upon the sea at a spot he named Chambers Bay, after the late Mr. James Chambers, who, with his brother and Mr. Finke, provided the means for Stuart's first three expeditions, and rendered great assistance to the two last. It has been thought that Stuart was a little out of his reckoning, for no trace of him could be found on the coast near the Adelaide River, and it is supposed he was rather more to the east, probably near one of the Alligator rivers. There is no doubt, however, that he and all his party viewed the ocean, and their camping-places were found at no great distance from the coast by surveyors and others engaged in the construction of the overland telegraph line seven years later. That line, in fact follows pretty nearly Stuart's tracks through the central and nearly all of its northern section.

It will be observed that considerable information concerning the Northern Territory had been supplied by different explorers during the forty odd years before the South Australian Government resolved to establish a settlement on the north coast. For an unsettled country it was well known, and there was nothing to excuse any great blunder in the selection of a suitable site for the principal location. As a result of Stuart's discoveries, the South Australian Government applied to have the Northern Territory annexed to South Australia, and with this request the Home Government complied. In 1864 the attempt at settlement was made; 250,000 acres were sold, half in Adelaide and half in London, at 7s. 6d. an acre, in sections of 160 acres, a half acre town allotment being sold at the same price with each section.

The first party, numbering about forty surveyors and other officers and men, left Adelaide in April, 1864, under command of Mr. Boyle Travers Finniss, who had filled many offices in the colony from the time of its establishment—including the positions of Treasurer, Chief Secretary, Colonel of Volunteers, and Acting-Governor. He landed the party at Adam Bay, and chose that spot as the site for the capital. A second party, equal in number to the first, followed in the same year. On the question of site and other matters he disagreed with most of his officers; the settlers, who only numbered three, condemned his choice, and after much waste of time Mr. Finniss was recalled, and, as the result of the finding of a Commission appointed to inquire into the circumstances connected with the settlement, resigned his position. Mr. Manton, a surveyor, then acted as Government Resident, with instructions to suspend the surveys till some decision was arrived at with respect to the site. The vessel that brought Mr. Finniss back to Adelaide took to the Northern Territory the late Mr. John McKinlay, the accomplished bushman who two or three years previously was despatched from Adelaide in search of Burke and Wills, and their party, and having found traces of those unfortunate explorers and supposing them all to have perished, pushed on and struck the north coast east of the Gulf of Carpentaria. McKinlay condemned Adam Bay and approved Anson Bay. But he was unwisely sent on his mission just before the wet season set in, and the consequence was that when he started to explore the country he was surrounded by

floods, lost all his horses, and narrowly saved the lives of himself and his men.

Next Mr. Manton and all his hands were taken back to Adelaide, and Adam Bay was finally abandoned; few if any persons now in the Territory have seen it. The late Capt. Cadell of Murray navigation fame, was sent to explore the coast. He furnished a report which led to nothing, and it was generally supposed the idea of settling the Territory was to be given up altogether. At this time only 15,000 acres of country lands and the capital, named Palmerston, had been surveyed. For a year there was not a white man in the Territory.

In 1869 the Government determined to survey the land they had covenanted to convey to the holders of the Northern Territory land orders. During five years, 15,000 acres of country land had been surveyed, and the Territory abandoned; it now appeared possible to survey properly 500,000 acres within twelve months, and the Surveyor-General, Mr. Goyder, was employed to manage this undertaking, having *carte blanche* to select his own officers and men. Most of the English land order holders demanded to have their money back. The contract was that the land should be conveyed to them within five years from the issue of the orders, and that period had elapsed before Goyder's survey was commenced. The Government resisted this claim, resting their defence on the ground that the agents of the claimants had asked for further examination of the country than the Government Resident considered necessary, and that the delays arose through attempting to comply with their request. Compliance with such a request did not necessarily involve such delays as had taken place, but the simple answer to the plea was that the plaintiffs' agents made no such request as was stated, and that in fact they had no agents. A Judge and jury gave a verdict against the Government; this was confirmed by the Full Court, and subsequently, on appeal, by the Privy Council. The Government had to pay back about £40,000 in principal and interest, besides heavy law costs.

Years before this litigation was over Mr. Goyder had completed his task. As compensation for the delay, the Government in the Northern Territory Act of 1868-9, offered the land order holders 320 acres instead of 160, so that they would get their land at 3s. 9d. per acre. But most of the purchasers in England were

not to be tempted. They were angered by disappointment and thoroughly sick of the enterprise and its mismanagement. Moreover they were advised that Goyder's survey would be carried on without regard to the quality of the land, but simply with the object of getting through with it as quickly as possible. Port Darwin was Mr. Goyder's base of operations. Here he fixed the capital, and preserved the name of Palmerston. The survey of the town and 500,000 acres of country land was completed in 1870; those order holders who demanded their purchase-money back received it in 1874.

In August, 1872, the telegraph line between Port Augusta and Port Darwin was completed. In the previous year gold had been found by the first prospecting party sent to the territory. They were despatched in consequence of some of the telegraph construction men having discovered the precious metal. It was known also that men belonging to Mr. Finnis's expedition had found a few specks, and judging from these discoveries and the character of the country, it was thought most likely that a considerable goldfield would be found there. Many parties were formed and followed the pioneer expedition in 1872, and the following year. During 1873 a gold mania overtook the people of Adelaide, who were kept in a constant state of excitement by the sensational telegrams received from the El Dorado of the north. The fever spread far beyond the city, and many persons have rued ever since their haste to get rich. Immense sums of money were wasted on machinery that never reached the mines, and on incapable or dishonest managers. Of course there was much dishonesty in the representations that were sent by wire respecting the discoveries, but many of the mines were honestly described; the disappointment arose in a large proportion of cases from mismanagement, the price of labor, the gold not lasting as the mines went to greater depths, and extravagant expectations. The workings were all in quartz reefs; alluvial ground was tried successfully afterwards.

After the mania subsided, the work of mining was carried on more quietly, and last year's export was, according to returns, £80,000 in value, and in these returns there is not included a considerable quantity that the Chinese diggers take away without giving any information to the authorities, in order to avoid the

export duty—which was 2s. 6d. per oz. up to September, 1882, when it was reduced to 1s. In 1881 the gold export was nearly £112,000. The yield fluctuates, according to the supply of water for washing and crushing purposes, or as alluvial diggings are discovered or worked out.

The laws relating to gold mining are liberal, the only complaints that have been made respecting them being that they favor the monopoly of auriferous land which the holders sometimes do not develop. There are provisions against this, but it has been complained that they are not properly enforced. There are miners' rights for the ordinary gold digger; prospectors' claims for persons searching for gold; a reduced area when the precious metal is discovered; leases, and conditions which must be complied with or the leases or other tenures become liable to forfeiture. The charges for rights and leases are low, but further particulars might be tedious, and can easily be obtained by anyone intending to embark in the gold mining industry in the Northern Territory.

Within the last year or two, some large deposits of tin ore have been discovered at Mount Wells and elsewhere, and some tons have been shipped from Port Darwin. Copper and silver have also been found, and when railway facilities are afforded, there is every probability that, independently of its gold, the Northern Territory will take rank among one of the metal producing countries of the world. There is a great deal of iron in the country, and it is said that indications of coal have been met with.

As an agricultural country, for tropical products especially, the territory presents great attractions. The Chinese cultivate vegetables with great success. Maize grows luxuriantly; forty years ago, heavy crops of this corn were produced at Port Essington. Cotton is indigenous to the country, but not of a sort required for commerce. There is no doubt, however, that the best kinds would thrive, and this has been made evident by experiments on a small scale.

Several companies and firms have been trying sugar cultivation, and have met with the disappointments that ordinarily attend new enterprises. About 200 bags, crushed on one plantation, have been brought to Adelaide, and persons qualified to speak with authority, by their experience in the Mauritius and other parts of the world, have no doubt that this form of industry will be

successfully established. Bananas thrive, with many other tropical plants, in the Government garden at Fannie Bay, near Palmerston. Rice would in all likelihood grow well on the large river flats.

Land is obtainable for agricultural purposes on easy terms. A block of 1,280 acres may be taken on five years' lease at sixpence per acre per annum, which, on compliance with easy cultivating and fencing conditions, becomes the property of the selector at the end of the term. Anyone can obtain a special survey of 10,000 acres and receive the fee simple, on paying 12s. 6d. per acre and the cost of survey. Large grants of land have been made to encourage sugar growing; but these are now things of the past.

Mr. Holtze, the Government gardener at the nursery, Fannie Bay, has shown that sugar cane, indigo, cotton, tapioca, rice, and other tropical products grow and thrive. In his latest report he says :—

I may state at the outset, that the Fannie Bay experimental nursery, covering thirty-two acres, was started under my management in November, 1879, and is, therefore, only about two and a half years old, so that it may be rather premature to pronounce a decided opinion upon the various plants which have been tried in the garden. I think, however, that those which have thriven during the tree-growing season, without being affected by climatic influence or disease, may fairly be said to be suited to the country; especially when we know that the first two seasons have been unfavorable on account of the weather being unusually dry, and that some of the soil in the nursery is rather poor. To simplify these notes it will be best to class the plants under three heads, viz. :—

1st. Those proved fully suitable to the country during each of the three past seasons.

Amongst them I am glad to say that the most valuable portion of those which succeed well includes sugarcane, indigo, tapioca, arrowroot, rice, maize, ramie, ground nut, castor-oil, sesam, and ginger.

All of these have grown in such luxuriance, and have been so completely free from disease or vermin, that I have not the slightest hesitation in recommending their culture.

2nd. Plants having failed in one of the seasons, through any cause, but otherwise apparently adapted to the climate of the territory. These include cotton, jute, and tobacco, though it is scarcely fair to put cotton in any other than the first division, as the cause of its failure last year was due to the seed being taken from deteriorated plants. I have since

imported fresh American seed of Upland and Sea Island varieties, and the state of their growth this year leaves nothing better to be desired.

Jute for the first two seasons was strong and healthy, but this year, probably from the unusual dryness of the weather, the plants have been attacked by borers and have been completely destroyed.

Of tobacco I had a good crop in the season of '79-80, but '81 was rather too dry to bring it to perfection, though the produce was by no means a failure. Of the present plantation I cannot yet give an opinion as it is yet too young. Tobacco should be grown during the first part of the dry season, it being a *sub-tropical* production, and would best thrive in the moist gullies which are so numerous in the territory, where I believe it would flourish in great luxuriance.

3rd. Of plants which have not thriven well in the nursery may be mentioned coffee, cocoa, nutmeg, cinnamon, cloves, pepper, tea, vanilla, poppy; but I have not the slightest doubt that in many parts of the country, in sheltered moist gullies, nearly all the above might be successfully cultivated, though I would not advise any large outlay to be incurred before a special trial.

Liberian coffee, which I received only a few months ago, stands very well, but it would be too early to give a decided opinion as to its fitness.

It must not be forgotten that our nursery is close to the sea, and exposed to its breezes, and that while many plants are not injuriously affected thereby, the air and saline moisture are too strong for other kinds.

I may here refer to another plant tried this season for the first time, and therefore still unproved; but when I mention that the seed was only put in the ground last September, and has already made a stem over 12ft. high and 3in. through, there are grounds for hoping that it will turn out a success. This is the Indiarubber plant (*Ceara* or *Manihet glazious*), seeds of which, with other valuable products, I received from my greatly esteemed friend Baron F. von Mueller, the celebrated Victorian Government Botanist.

In the foregoing I have only referred to those plants which have a commercial value, and are the common staple produce of tropical countries: but I might add that many tropical and sub-tropical fruit trees are being tried and propagated in the nursery, most of which are doing well—such as the mangoe, jackfruit, breadfruit, custard apple, sweetsop, soursop, orange, citron, lemon, lime, shaddock, fig, peach, pomegranate, luche, longan, bambootan, jujube, almond, quince, grana-dillar, banana, plantain, pineapple, &c., as well as a collection of fodder plants and grapes, together with ornamental trees and shrubs in considerable variety.

Intending colonists may feel interested in vegetables as well as in the above-enumerated productions, so I may in conclusion state that a fair variety of tropical as well as European vegetables are successfully grown and sold at reasonable prices by the Chinese market gardeners.

The latest report dated February 12th, 1883, from the manager of Poett's plantation at Rum Jungle, states as follows:—

Cinchona.—These require a great deal of attention to raise and grow at first, but after they pass the first five or six months they do wonderfully well—better than in India. Some seed planted here only eleven months ago has given us a few plants whose growth, for cinchona, is splendid. I have never seen it equalled in Ceylon. On the 50th November I marked these plants as 15in.; to day they top a yard measure. This is a splendid growth for cinchonas, and I am much pleased with such success. I was very sanguine of their doing well, but they far exceed my most glowing anticipations. Of younger cinchona plants there are fully 10,000 promising splendidly, and probably 200,000 younger still. I never saw better prospects of the growth being successful than I now point to on this estate.

Coffee.—There are from 150,000 to 200,000 young plants just putting out their fourth leaves, and a prettier, more successful, or more healthy nursery I challenge anyone to show *anywhere*.

Cotton.—There are thirty-five plants of this. It is the South Sea Island variety, and grows most beautifully. I will send samples before long.

Tobacco—Indiarubber.—A small parcel of seeds of both the above have been received and planted with due care. The latter will do well here, and I think tobacco will also, but of this plant I have not much experience.

The prospects of the estate are most encouraging and satisfactory.

It may here be mentioned that the mean average rainfall at Palmerston for the past thirteen years is 63·223 inches.

There can be no doubt that the pastoral industry will attain great dimensions, and be largely profitable much more quickly than agriculture. The grasses of the country are very rich and nourishing, even where from the rankness of the growth this might not be expected; and the pasture, as in other parts of Australia, will improve with grazing. Live stock fatten rapidly, especially cattle, and they will pay the squatter best: they do not suffer from the heat, and during the dry season they put on beef very fast. There is no reason whatever why there should not, in a few years, be an enormous export of refrigerated meat from Port Darwin and other ports on the coast. Cattle stations are rapidly being formed, and it cannot be long before the necessity will arise for arrangements being made for the shipment of Northern Territory beef.

Sheep are not suited so well as cattle to that portion of Australia. Their fleece degenerates, but they otherwise thrive, and

will be bred in sufficient numbers to supply the settlers with mutton.

Horses will form another export. Ten or a dozen years ago Mr. Ross, the present Speaker of the Assembly, urged both in England and South Australia that Port Darwin should be the *entrepot* from which horses could be shipped for the Indian market. Sir James Fergusson, who both during and since his governorship of South Australia has taken the liveliest interest in the colony and its northern dependency, warmly supported this view. The port is near to India, and the passage smooth. It is likely that hardy horses could not be bred in the most tropical region near the north coast, but farther south the atmosphere is drier, and is suited to the rearing of horses in perfection as regards form and stamina, and the supply would be unlimited.

Whatever live stock squatters may prefer to breed, pastoral lands can be leased on easy terms; blocks from twenty-five to four hundred square miles can be had for twenty-five years at an annual rent of sixpence per square mile for the first seven years, and two shillings and sixpence for the remainder of the term. They must be declared stocked within three years from the date of application, to the extent of two head of large or ten head of small cattle for every mile of country applied for.

The land near the coast is somewhat dreary, but towards the western boundary high land is visible from seaward at a distance. The formation is principally sandstone and ironstone; inland, quartz and granite are met with, till the watershed is reached, when sandstone prevails. The table land and hill country range in height from 300ft. to 800ft., with elevations of about 1,300ft. Near the Victoria River the range reaches an elevation of nearly 1,700ft. There are navigable rivers from east to west of the coast. The Roper was used by Mr. Todd in transporting his telegraph materials. The dashing explorer McKinlay sailed down one of the Alligator rivers in a punt composed of saplings and horsehides; for this purpose he killed all the horses he had not slaughtered for food on that disastrous expedition. The Adelaide has been well proved by Her Majesty's ships and merchant vessels. The Daly, flowing into Anson Bay, and discovered by some of Mr. Finnis's party, is navigable; and last not least there is the great Victoria with its long reaches, windings, and strong currents, besides lesser

streams not to be despised. No country is better supplied with good harbors. The tide in some parts of the coast rises 19ft., but this is 18ft. below the rise at Camden Harbor, on the north-west coast of the adjoining colony.

The largest trees are eucalypts, but there are pines, bloodwood, cedars, blackwood, the cabbage palm, banksia, and other trees; in fact, splendid collections of Northern Territory timber have been shown at exhibitions, and are to be seen in Australia in museums. The mangroves grow to a great size, and even the largest on some parts of the coast are under water at high tide. The bamboos are of great diameter and height, and are used for building purposes.

The rivers swarm with crocodiles, which are also seen in the bays. Turtles are common, but require skill and patience to capture them. Fish abound, but are shy of the hook. Good hauls are obtained with the net. Very small oysters are to be seen in millions, clinging to the rocks, and a larger sort are found in great quantities in some parts of the coast. Reptiles are not so plentiful as in some other portions of the continent. Some of the members of the first Adam Bay expedition ate snakes and lizards, provisions being scarce. Marsupials, including the kangaroo and a red wallaby, are tolerably plentiful; the emu is not wanting; geese and ducks of various species, the teal, widgeon, plover, quail, pigeons, and doves of different kinds, parrots, cockatoos, and most of the birds found in other parts of the continent invite the attention of the sportsman or the naturalist. There is a genuine pheasant, but with very plain plumage, in the Territory. Sometimes kites are in countless myriads. Mosquitoes and sandflies are extremely troublesome in low swampy localities, especially in certain seasons of the year.

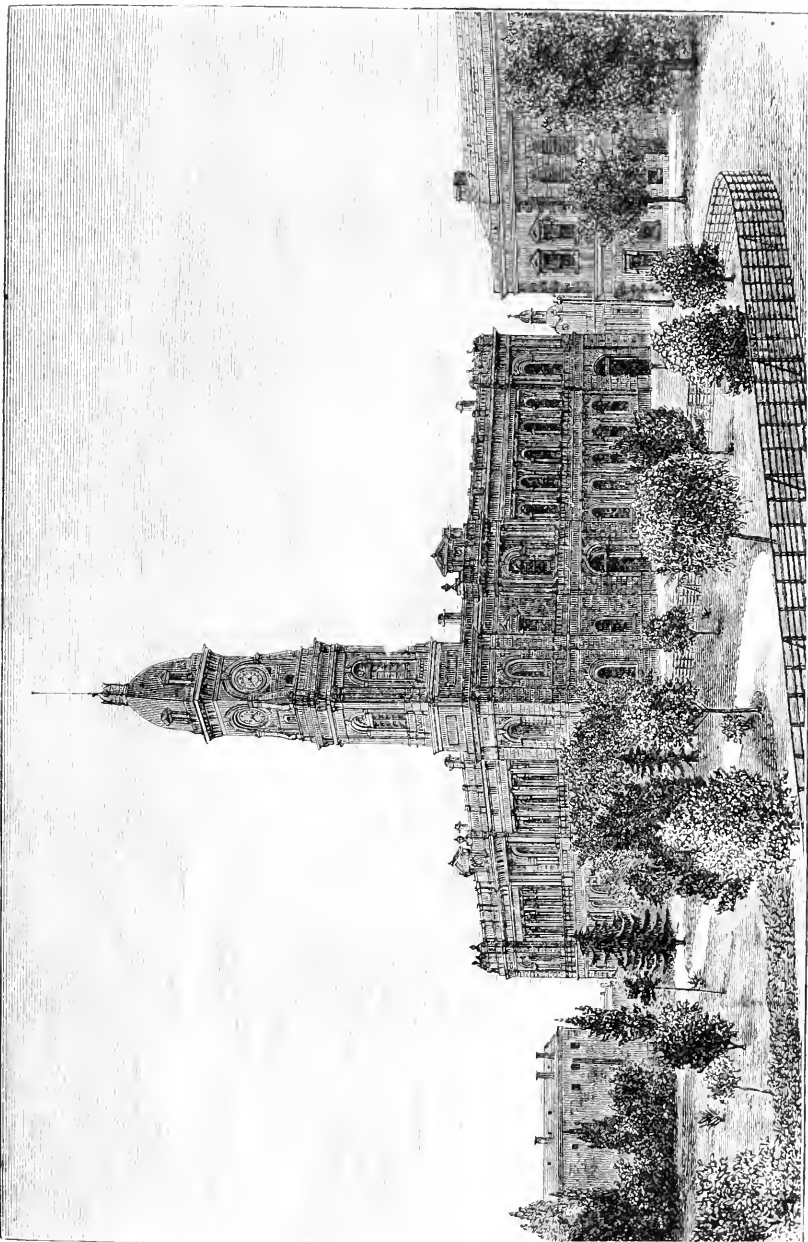
The rain sets in about November or sometimes in the next month, and continues till the end of March. Little rain falls at other periods of the year. The register at Port Darwin for the year 1880 was 58·46 inches, and this is several inches below the average. The rainfall decreases to the southward. Port Darwin is in lat. 12° 28'. At Barrow Creek, about lat. 21° 30', in the year just named, the rainfall was 10·74. The climate is tropical, but not so oppressive or enervating as that of most other tropical countries. Europeans go through much exertion in the Territory, and do a

considerable amount of work at the mines ; but it is evident that severe toil does not suit them, and on this account, and because of the enormous wages demanded, it is necessary that for field work colored labor should be obtained.

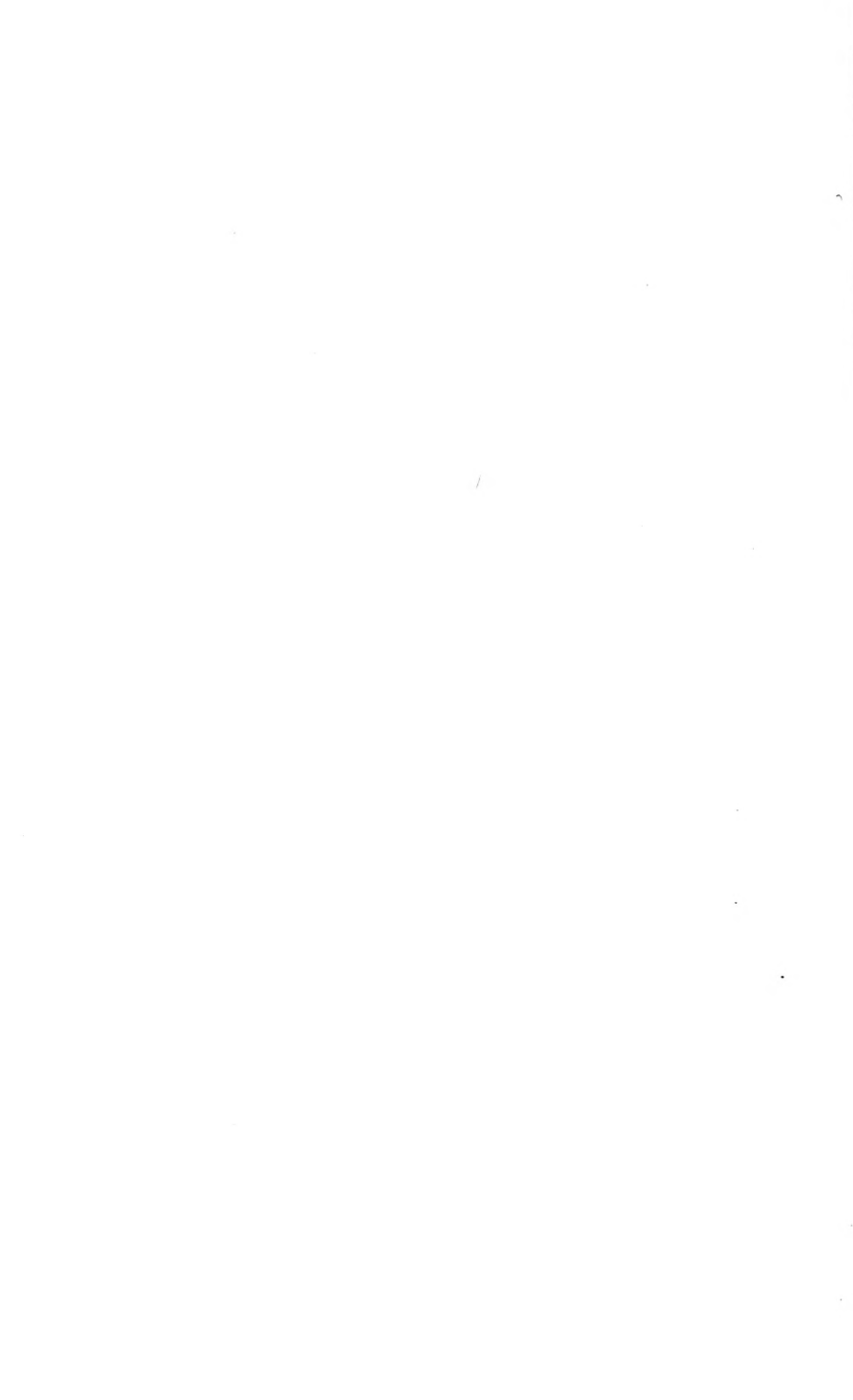
With the concurrence of the British and Indian Governments, a South Australian Act has been passed to facilitate and regulate the employment of coolies, from India, in the Northern Territory. The planters have not yet applied for a sufficient number to induce the Government to make arrangements for the introduction of any, but India is the source to which Northern Territory settlers will look for a supply of plodding, manageable field hands, who will find in that country a climate and employment suited to their habits and constitution.

The tariff of the Northern Territory is nearly identical with that of South Australia proper, but the duty on opium is 20s. per lb. in the former—just double the South Australian duty. The revenue is in excess of the expenditure. The Customs revenue for 1882 amounted to £16,345 ; the land and miscellaneous revenue amounts to about twice that sum. There can be no reasonable doubt that the Territory has entered upon a career of progress, and offers a fine field for pastoral, agricultural, and mining enterprise.

Some thousands of pounds have been expended in buildings, bridges, and roads, but the great demand of the settlers has been for a railway leading from their chief port into the mining country. Their wish is likely to be gratified. With only three dissentients, the Assembly has just passed a Bill for a line from Port Darwin to Pine Creek, a distance of nearly 150 miles, and this measure is before the Legislative Council. In order to meet this line from the south, both Houses have passed a Bill for the extension of the Port Augusta railway from Hergott Springs to Primrose Springs, a distance of 180 miles. When these two sections are finished, half the trans-continental railway will be completed, leaving the central portion to be proceeded with ; and there can be little doubt that in a very few years the Southern and Indian Oceans will be connected by the iron road, as they now are by the electric wire.



General Post Office, Adelaide.



CHAPTER XXIII.

Exhibitions—Calcutta Exhibition—Commercial intercourse between India and Australia—The Jubilee Exhibition—Past and Future.

THIS is the age of International Exhibitions. Since that one projected by Prince Albert, and held in London thirty-two years ago, there have been many; in Paris, in the German and Austrian capitals, in Italy, in Amsterdam, and in Philadelphia, the nations have gathered in friendly rivalry, striving which could show superior excellence or greater novelty or rarity in arts, manufactures, and inventions, in the work of the forge and the loom, the products of the field, the mine, and the ocean. All the sanguine hopes that were associated with the first of these great shows have not been realised. They have not banished war and national strife and jealousy. But they have impressed deeply upon men's minds the value of peace, and of free intercourse between the nations. The sum of human knowledge has been greatly increased, race prejudices much diminished, and human enjoyments added to by these shows. The Exhibitions in Sydney and Melbourne, when they were held, were considered by many persons not usually given to despondent or pessimist views of things to be costly vanities, that would never pay for the money lavished upon them. Time, however, has shown that these opinions were mistaken, and they have been recanted by nearly everybody who avowed them. The most solid advantages have been derived from these Exhibitions, in the increase of trade, the stimulus given to various branches of industry, and the knowledge acquired respecting the resources and prospects of Australia by persons who previously had taken little interest in the great south land. The benefits were experienced both by those who held and those who visited these shows. Australians had much to learn from the old world, and something to teach. In no other way can a general view be so rapidly obtained of the special products and manufactures in which

different nations excel, and of the progress going on in science and invention, and the improvements in industrial processes.

The Calcutta Exhibition will doubtless draw great numbers of visitors from all parts of the world, and the Australian colonies have wisely resolved to be represented there. During the last few years the commerce between Her Majesty's grand Indian Empire and "Greater Britain" has largely grown, and the increase will, there is every reason to believe, be more rapid and considerable in the future. Indian teas are supplanting those of the Flowery Land. The number of products India could supply, that are not produced in the temperate portions of New Holland, might be largely increased. Australian squatters and farmers depend on that source for the greater portion of their bags and bales. In return Australians can send horses, timber, wines, fruits, jams, meat, and many other articles of necessity and luxury. The horse trade alone should assume large dimensions, for in Australia the noble animal finds its natural habitat, where it can be bred in the greatest perfection. None of the colonies is better situated for this trade than South Australia with her territory stretching from the Southern to the Indian Ocean, and fine harbors on the north coast from which to ship chargers, hacks, artillery and carriage horses, in sufficient numbers to meet any demand.

The refrigerating process, now brought to such a degree of excellence, makes it practicable to ship meat and vegetables and other perishable articles from one side of the world to the other; and the voyage from Adelaide or Port Darwin to Calcutta is a trifle. In the course of a short time the intercourse between India and the Northern Territory must be constant, for the supply of labor will come from India, as soon as the difficulties associated with the inauguration of a new system are overcome. To the capitalist of enterprise the Northern Territory presents an inviting field for intelligent investment, as good land on which valuable products can be raised may be purchased there at a very low price. In Queensland, land that a very few years ago was bought for a few shillings per acre is now worth £7 or £8 for sugar growing purposes.

Four years hence South Australia will hold her Jubilee Exhibition, to which all the world is invited. It is felt that no more fitting time could be selected than the year in which she can

point to the results of half a century of colonial enterprise and labor—to the energy, patience, and sagacity that out of a wilderness occupied by a few wandering savages, who did not cultivate a rod of ground, have built cities and towns, established harbors, constructed thirteen hundred miles of railway, and thousands of miles of macadamized road; spanned the continent with the electric wire; raised corn in abundance for a considerable population, and shipped a large surplus to distant lands; planted orchards and vineyards; worked valuable mines, that are known throughout the world; stocked the country with millions of sheep; built up a trade that, in proportion to the population, is hardly equalled by that of any other people; founded a commonwealth with the institutions of a free and christian people, rejoicing in their privileges, and notwithstanding the defects and inequalities belonging to every human society, possessing the comforts, luxuries, and refinements of older and larger communities.

While the past gives such ground for satisfaction, South Australians can look forward confidently to the future, knowing that the industries of their country are yet in their infancy, and her vast natural resources almost untouched. Almost all the great staple exports, both of Southern and Northern Europe, may and will become staple exports of South Australia, for it is a land of corn and wine and oil, where all fruits flourish, some in the hills, some in the plains, and others everywhere. The mineral wealth of the colony is boundless, and only awaits development. With railway facilities for the transport of ore, the capital, perseverance, and and mining knowledge directed to this form of enterprise are certain to meet with a rich reward, both in the northern and southern portions of the province.

It is natural for the people of young countries to devote their energies to the production of raw materials more than to manufactures, which, however, increasing from small beginnings in time grow into importance. What Australians can manufacture and what they can produce—what treasures the earth gives forth in their territories, may be seen by the exhibits they send to Calcutta. Beneficial as International Exhibitions are to the nations generally, it is specially desirable that the people of the different colonies and dependencies of Great Britain, widely severed by distance as they may be, and, perhaps, greatly differing in customs and occupa-

tions, should meet, in friendliness and cordiality, in generous emulation in all that tends to increase the sum of human happiness and promote the common prosperity of that glorious empire on which the sun never sets.

It is commonly said now that Exhibitions are overdone ; but for each new one there is some special reason why it should be supported. The Calcutta show is of particular interest to the Australian colonies ; and it is confidently hoped that the great gathering in the City of Palaces will be repeated in Adelaide when that city will have railway communication with the great capitals to the eastward and with two millions of people, and when Australians and New Zealanders will shake hands on the banks of the Torrens with their fellow subjects from the old country, from India and all parts of the globe, and in the true cosmopolitan spirit with people of all nations.

APPENDICES.

TABLE I.—POPULATION, 1881.

Name of Colony.	Area in Square Miles. ¹	On the 31st December.				Estimated Mean Population of the Year.				
		Estimated Population. ²			Number of—		Persons to the Square Mile.	Males.	Females.	Total.
		Males.	Females.	Total.	Males to 100 Females.	Females to 100 Males.				
Victoria	87,884	464,222	418,010	882,232 ³	111.05	90.05	10.039	456,107	412,135	868,942 ³
New South Wales.....	309,475	429,278	351,087	781,265 ³	121.96	82.00	2.53	419,245	343,761	763,006 ³
South Australia ⁴	903,425	156,445	136,852	293,297 ³	114.32	87.48	.325	154,154	134,419	288,573 ³
Queensland	668,224	132,904	94,004	226,908	141.29	70.78	.340	129,583	91,428	221,011
Western Australia	975,020	17,216	12,797	30,013	134.53	74.33	.038	17,078	12,770	29,848
Total	2,944,628	1,200,065	1,013,710	2,213,775	118.38	84.47	.752	1,176,167	995,213	2,171,380
Tasmania	26,375	63,234	55,689	118,923	113.55	88.07	4.509	62,198	55,116	117,314
New Zealand	134,403	274,986	225,924	500,910	121.72	82.16	4.768	271,385	222,179	493,564
Grand Total	3,075,406	1,538,285	1,205,323	2,833,608	118.76	84.21	.921	1,509,750	1,272,508	2,782,258

¹ The areas of the colonies on the Australian continent and of Tasmania were, a short time since, recalculated according to several distinct methods, by Mr. A. J. Skene, Surveyor-General of Victoria, and the result is given in this column. Owing to recent corrections, the areas for Queensland and New Zealand differ slightly from those given last year.

² According to the census taken on the 3rd April, 1881, the population of Victoria was 862,346; of New South Wales, 751,468; of Queensland, 213,525; of South Australia, 286,211; of Western Australia, 29,798; of Tasmania, 115,765; and of New Zealand, excluding Maoris, 489,523. Aborigines are included in the figures relating to Victoria, New South Wales, and South Australia, but not in those relating to the other colonies. The aborigines enumerated at the census were as follow:—In Victoria, 780; New South Wales (civilised aborigines only), 1,643; South Australia (settled districts only), 6,346; Western Australia (number employed by settlers only), 2,346; New Zealand (Maoris), 4,007. In Queensland, where no regular enumeration of the aborigines was made, they number, according to a recent estimate, 20,585. In Tasmania they have all died out. There is reason to believe that in several of the neighboring colonies, on account of their large area and scattered populations, only a small portion of the aborigines have been accounted for. On the 30th June, 1882, the estimated population of Victoria was—Males, 469,510; females, 422,735; total 892,245; and that of South Australia was 295,082.

³ Including aborigines. See footnote 2.

⁴ Including the Northern Territory, the area of which is estimated to be 523,620 square miles, and the population 2,470. Of the latter 400 are whites, 30 Malays, and 2,070 Chinese.

TABLE II.—BIRTHS, DEATHS, AND MARRIAGES, 1881.

Name of Colony.	Births of—		Deaths of—			Mar- riages. 1	Per 1,000 of Mean Popu- lation ² —No. of—				Excess of Births over Deaths.		Males to 100 females.	
	Males.	Females.	Total.	Males.	Females.		Total.	Births.	Deaths.	Mar- riages.	Nu- merical.	Per cent.	Born.	Died.
Victoria	13,903	13,242	27,145	7,024	5,278	12,302	5,806	31.24	14.16	6.79	14,843	120.66	104.99	133.08
New South Wales.....	14,891	14,102	28,993	6,753	4,783	11,536	6,284	38.00	15.12	8.24	17,457	151.33	105.50	141.19
South Australia.....	5,522	5,186	10,708	2,223	1,789	4,012	2,308	37.11	13.90	8.00	6,696	166.90	106.48	121.26
Queensland	4,242	3,978	8,220	2,155	1,165	3,320	1,703	37.19	15.02	7.71	4,900	147.59	106.64	181.98
Western Australia	522	483	1,005	273	139	412	197	33.67	13.80	6.60	593	143.93	108.07	106.40
Total.....	39,080	36,991	76,071	18,428	13,154	31,582	16,388	35.03	14.54	7.35	44,489	140.87	105.65	140.09
Tasmania.....	2,029	1,889	3,918	1,038	695	1,733	856	33.40	14.77	7.30	2,185	126.08	107.41	149.35
New Zealand	9,590	9,142	18,732	3,247	2,244	5,491	3,281	37.95	11.13	6.65	13,241	241.14	104.90	141.70
Grand Total	59,699	48,022	98,721	22,713	16,093	38,806	20,525	35.48	13.95	7.38	59,915	151.40	105.57	141.14

¹ The numbers in these two columns doubled give the total number of persons married, and the number married in proportion to every 1,000 of the mean population.

² In calculating these results the mean populations shown in the last column of Table I. have been used.

TABLE III.—IMMIGRATION AND EMIGRATION, 1881.

Name of Colony.	Number of Immigrants.						Number of Emigrants.			Excess of Emigrants over Immigrants.		
	Assisted and Free.			Unassisted.			Total.					
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Victoria	—	—	—	41,579	17,487	59,066	41,579	17,487	59,066	5,887	1,435	7,322
New South Wales	1,256	1,321	2,577	32,937	12,209	45,146	34,193	13,539	47,732	16,739	6,159	22,898
South Australia	418	365	783	13,020	5,749	18,769	13,438	6,114	19,552	1,284	1,468	2,752
Queensland	2,015	1,026	3,041	9,539	2,743	12,282	11,554	4,669	16,223	4,554	2,460	7,014
Western Australia ...	71	75	146	349	202	611	420	337	757	—	163	67 ²
Total	3,760	3,687	7,447	97,424	38,450	135,874	101,184	42,137	143,321	28,308 ²	11,685	40,053
Tasmania	26	35	59	8,650	3,870	12,520	8,676	3,903	12,579	1,343	73	1,416
New Zealand	38	65	103	6,605	2,980	9,585	6,643	3,045	9,688	938	678	1,616
Grand Total	3,824	3,785	7,609	112,679	45,300	157,979	116,503	49,085	165,588	30,649	12,430	43,085

NOTE.—The immigration and emigration in this table is by sea. No official account is, or can be, taken of the number of persons going overland from one colony to another.

¹ The sexes of immigrants and emigrants were not given for Western Australia; the numbers of either sex have therefore been estimated according to the proportions in the previous year.

² These are net numbers.

TABLE IV.—PUBLIC REVENUE AND EXPENDITURE, 1881.

Name of Colony.	Date on which Financial Year terminates.	Public Revenue.		Public Expenditure.	Per Head of Mean Population. ²			Proportion of Revenue raised by Taxation.
		Raised ¹ by Taxation.	Not raised by Taxation.		Taxation.	Total Revenue.	Expenditure.	
		£	£	£	£ s. d.	£ s. d.	£ s. d.	per cent.
Victoria ³	June 30th	2,003,704	3,182,307	5,108,642	2 6 7	6 0 7	5 18 9	38.64
New South Wales	Dec. 31st	1,770,848	4,037,115	5,800,580	2 6 5	8 15 10	7 14 5	26.40
South Australia	Dec. 31st	557,188	1,614,800	2,171,988	1 18 7	7 10 4	7 2 4	25.65
Queensland	June 30th	657,753	1,305,915	1,975,654	3 1 2	9 8 2	8 3 5	32.50
Western Australia	Dec. 31st	109,199	145,114	197,386	3 13 7	8 11 4	6 13 0	42.94
Total .....	...	5,098,692	11,245,251	15,008,547	2 7 3	7 11 7	6 19 2	31.20
Tasmania ⁴	Dec. 31st	350,146	155,726	408,613	2 19 8	4 0 3	3 19 11	69.22
New Zealand	Dec. 31st	1,881,024	1,876,469	3,757,493	3 16 3	7 12 3	7 9 0	50.06
Grand Total .....	...	7,320,862	13,277,446	19,152,057	2 13 0	7 8 11	6 18 5	35.57

¹ The amounts in this column are made up of Customs duties, exclusive of duties on the export of gold, drawbacks, &c.; also of excise duties, including licences imposed for revenue purposes; duties on bank notes, stamps, other than those for fees of office; legacy, succession, and probate duties; property and income taxes; and any other impost, payable to the General Government, levied distinctly as a tax; but excluding fees, licences, and charges for special services rendered.

² In calculating these amounts the population of Victoria (860,067) and Queensland (215,051), on the 1st January, 1881, have been taken. For the other colonies the figures of mean population shown in the last column Table I. have been used.

³ According to a return made up in the Treasury, but not audited up to the time of this going to press, the figures for Victoria during the year ended June 30th, 1882, were as follows:—Revenue raised by taxation, £2,317,706; revenue not so raised, £3,274,056; total revenue, £5,592,362; estimated total expenditure, £5,617,661. The estimated mean population of the same period was 880,286; therefore the revenue per head was £6 7s. 1d.; the expenditure per head was £6 7s. 8d.; and the taxation per head was £2 12s. 8d.

⁴ The figures for Tasmania are subject to future revision.

TABLE V.—PUBLIC DEBT, 1881.

Name of Colony.	On the 31st December.		Number of Years' Revenue Debt is Equal to. ²
	Total Amount of Public Debt.	Indebtedness per Head of Population. ¹	
	£	£ s. d.	
Victoria ³	22,420,502	25 8 5	4'32
New South Wales	16,024,019	21 13 3	2'52
South Australia	11,106,800	38 3 6	5'16
Queensland	13,245,150	58 7 1	6'55
Western Australia	511,000	17 0 0	2'01
Total	64,303,471	29 0 11	3'93
Tasmania	2,003,000	16 16 10	3'96
New Zealand ⁴	20,650,111	59 4 2	7 80
Grand Total	95,005,582	33 17 4	4'60

¹ In calculating these results the populations on the 31st December shown in the fifth column of Table I. have been used.

² In calculating these results the figures of public revenue given in Table IV. have been used.

³ On the 30th June, 1882, the Public Debt of Victoria was £22,424,202. The estimated population at that date was 802,245, and the revenue of the financial year ended with that date was £5,502,302. The amount of indebtedness per head was thus £24 15s. 10d., and the debt was equivalent to 3'60 years' revenue.

⁴ The Accrued Sinking Fund of New Zealand amounted on the 31st December to £2,203,804. The net liability is therefore £27,255,418.

TABLE VI.—IMPORTS AND EXPORTS, 1881.

Name of Colony.	Total Value of—			Value per Head of Mean Population of ¹ —		
	Imports.	Exports.	Both.	Imports.	Exports.	Both.
	£.	£.	£.	£. s. d.	£. s. d.	£. s. d.
Victoria	16,718,521	16,252,403	32,970,924	10 4 10	18 14 0	37 18 10
New South Wales	17,409,326	10,019,503	33,458,824	22 10 4	21 0 8	43 17 0
South Australia	5,214,064	4,497,757	9,651,821	18 3 5	15 5 6	33 8 11
Queensland	4,063,025	3,540,366	7,603,991	18 7 9	16 0 4	34 8 1
Western Australia	404,831	502,779	907,601	13 12 9	16 18 9	30 11 6
Total	43,840,367	49,752,499	84,592,866	20 3 9	18 15 4	38 19 1
Tasmania	1,431,144	1,555,576	2,986,720	12 4 0	13 5 2	25 9 2
New Zealand	7,457,045	6,000,866	13,517,911	15 2 3	12 5 7	27 7 10
Grand Total	52,728,556	48,308,941	101,097,497	18 19 0	17 7 8	36 6 8

¹ In calculating these results the mean populations shown in the last column of Table I. have been used.

TABLE VII.—SHIPPING, 1881.

Name of Colony.	Inwards.		Outwards.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
Victoria	2,125	1,210,231	2,123	1,102,671	4,248	2,411,002
New South Wales	2,254	1,130,239	2,103	1,330,261	4,357	2,760,500
South Australia	1,072	640,885	1,081	628,666	2,153	1,209,491
Queensland	1,312	701,800	1,351	771,900	2,663	1,533,868
Western Australia	185	145,048	183	139,998	368	285,046
Total	6,048	4,223,302	6,841	4,063,445	13,789	8,286,747
Tasmania	604	192,024	689	101,738	1,383	383,762
New Zealand	765	420,134	702	413,487	1,527	833,621
Grand Total	8,497	4,835,460	8,292	4,668,670	16,699	9,594,130

TABLE VIII.—RAILWAYS AND ELECTRIC TELEGRAPHS, 1881.

Name of Colony.	Number of Miles of Railway.			Number of Miles of Electric Telegraph.		
	Open.	In course of Construction.	Total.	Line (Poles).		Wire Open.
				Open.	In course of Construction.	
Victoria	1,247 ¹	159	1,406	3,350	159	3,509
New South Wales.....	1,041 ²	573	1,614	8,515	302	8,807
South Australia.....	832	161	993	4,046	95	5,041
Queensland.....	800	233	1,033	6,280	273	6,553
Western Australia	92	20	112	1,585	—	1,585
Total.....	4,012	1,110	5,158	24,676	919	25,595
Tasmania	172	—	172	928 ³	—	928
New Zealand	1,287	171	1,458	3,824	100	3,924
Grand Total	5,471	1,317	6,788	29,428	1,019	30,447

¹ Consisting of 178 miles of double and 1,069 miles of single line.² Inclusive of a private line, 45 miles in length. In addition to the railways, there were 11½ miles of tramways open. Including 133 miles of poles and wire belonging to the Main Line Railway Company.³

TABLE IX.—CROWN LANDS ALIENATED, 1881.

Name of Colony.	Area in Statute Acres. ¹	Acres Granted and S. d. ²			Amount Realised on Land Sales.						Extent Unalienated at end of 1881. ⁴
		Prior to 1881.	During 1881.	Total.	Total.		Average per Acre. ³				
					Prior to 1881.	During 1881.	Total.	Prior to 1881.	During 1881.	Total.	
Victoria	50,215,760	12,152,527	461,873	12,614,400	£	£	£	£ s. d.	£ s. d.	£ s. d.	Acres.
New South Wales	107,872,000	33,200,766	3,672,683	36,873,449	10,008,398	571,382	20,182,780	1 12 3	1 4 10	1 12 0	43,631,360
South Australia	578,102,000	8,012,427	640,476	8,652,903	30,206,717	3,822,087	34,118,804	0 18 1	1 0 10	0 18 5	100,020,551
Queensland	427,663,300	4,556,723	795,853	5,352,576	12,020,426	781,586	12,812,012	1 6 11	1 4 6	1 6 0	508,600,007
Western Australia	624,588,800	1,603,121	10,242	1,712,363	3,508,184	387,833	3,896,017	0 15 8	0 0 0	0 11 9	422,307,781
Total	1,881,501,920	60,617,501	5,500,427	66,117,928	z	5,574,638	z	z	0 19 11	z	1,818,354,229
Tasmania	16,880,000	4,232,870	33,074	4,265,944	1,042,581	51,005	1,093,586	0 0 2	1 10 11	0 0 4	12,614,056
New Zealand	66,818,160	15,417,727 ⁵	811,748	16,229,475	11,524,867	305,536	11,830,403	0 11 11	0 0 0	0 14 8	50,588,085 ⁶
Grand Total	1,968,200,080	80,208,161	6,413,049	86,703,110	^c	5,901,239	z	z	0 18 7	z	1,881,550,970

¹ See first footnote to Table I. *ante*.

² The figures for Victoria, Queensland, and New Zealand do not include land of which the purchase was not completed. Such land amounted, at the end of 1881, to 7,145,392 acres in Victoria, and at the end of 1879 to 3,720,000 acres in Queensland, and at the end of 1880 to 350,534 acres in New Zealand. The figures for New South Wales and South Australia do include such land, which in the former colony amounted at the end of 1881 to 13,500,810 acres, exclusive of over 4,100,000 acres, of which the purchase had been cancelled. Portion of this land might revert to the Crown in consequence of non-fulfilment of conditions, &c.

³ To compute the amounts in these columns the money realised has been divided by the sum of the acres granted and sold. The amounts, therefore, express the average price realised for all the land parted with, including not only that for which money was paid, but that which was granted without payment.

⁴ In Victoria, Queensland, and New Zealand the land in process of alienation is included under this head. See note 2.

⁵ Including about two and a half million acres granted or reserved under Acts.

⁶ Of this extent about 10,000,000 acres belong to the Maoris, or to Europeans who have purchased from them.

* Where asterisks occur the information has not been furnished, or is incomplete.

TABLE X.—AGRICULTURAL STATISTICS, 1881-2.—LAND IN CULTIVATION.

* The Agricultural Statistics in most of the colonies are collected in the months of February and March of each year. The present returns are for those months of 1882. In calculating the rates of tillage per head, the population at the 31st of December, 1881, has been taken.

Name of Colony.	Number of Acres. under Tillage.		Number of Acres under —									
	Total.	Per Head of Population.	Wheat.	Oats.	Barley.	Maize.	Other Cereals. ¹	Potatoes.	Hay.	Vines.	Green Forage. ²	Other Tillage. ³
Victoria	1,824,110	2.06	6,167,200	146,005	48,052	1,783	20,000	3,429	212,150	4,023	211,047	172,502 ¹
New South Wales	645,068	.83	2,218,888	103,148	6,427	117,478	1,110	15,011	140,010	2,507	78,825	10,832 ⁵
South Australia	2,013,303	8.01	1,708,781	3,023	11,053	—	1,010	6,130	333,497	4,202	28,801	452,831
Queensland	1,28,075	.50	1,678	88	250	46,180	272	5,080	10,026	890	11,034	41,735 ⁶
Western Australia	53,353	1.78	51,051	827	3,070	30	640	278	21,445	527	—	670
Total	5,202,418	2.38	2,011,057	107,281	70,607	165,777	33,550	60,573	733,508	13,130	358,207	708,873
Tasmania	374,374	3.75	51,757	27,535	4,507	—	5,006	6,070	34,700	—	137,681	102,438
New Zealand	1,310,100	2.03	305,715	243,387	20,868	—	—	22,510	68,423	—	61,431	528,150
Grand Total	6,955,352	2.15	3,371,529	448,203	105,372	165,777	30,102	98,783	830,811	13,130	557,103	1,330,497

¹ Including beans and peas, except in the case of New South Wales.

² In addition to crops sown for the purpose of being cut green for cattle, this column contains the following areas laid down in permanent artificial grass in the colonies named:—Victoria, 238,721 acres; South Australia, 8,505 acres; Queensland, 16,138 acres; Tasmania, 130,341 acres.

³ In the returns of some of the colonies this column embraces land in fallow as well as land under crop. The following are the areas in fallow included in the returns of such colonies:—Victoria, 111,320 acres; Queensland, 8,000 acres; South Australia, 141,058 acres; Tasmania, 23,030 acres; New Zealand, 218,552 acres.

⁴ Including 437 acres under turnips, carrots, parsnips, cabbage, and beet, which produced 44,450 tons; 1,044 acres under mangel-wurzel, which produced 114,780 tons; 14133 acres under onions, which produced 10,100 tons; 1,191 acres under tobacco, which produced 12,870 cwt.; 207 acres under clover, which produced 787 tons; 504 acres under hops, which produced 4015 cwt.; 2,001 acres under grass seeds, which produced 32,085 bushels, &c.

⁵ Including 12,108 acres under sugar-cane, of which 1,081 acres were productive, and yielded 150,048 cwt. of sugar; 127 acres under arrowroot, which produced 14,423 lbs.; 1,025 acres under tobacco, which produced 18,316 cwt.; and 6,191 acres under orange trees, which produced 5,104,134 dozen oranges.

⁶ Including 28,026 acres under sugar-cane, which produced 10,800 tons; 165 acres under arrowroot, which produced 311,300 lbs.; 440 acres under bananas, which produced 3,0030 dozen; 252 acres under oranges, which produced 14,070 dozen; 230 acres under sorghum; 105 acres under pineapples, which produced 73,818 dozen; 073 acres under cotton, which produced 183,188 lbs.; 68 acres under tobacco, which produced 52 cwt.; &c.

⁷ In the figures for New Zealand the land under permanent artificial grass, amounting to 30,380 acres—of which 1,771,875 acres had been, and 2,100,104 acres had not been, previously ploughed—is not entered as green forage, nor, with the exception of 68,423 acres, embracing some of the ploughed and some of the unploughed portion, the grass on which was mowed for hay, is it included in the total area under tillage, as in the other colonies. Were the whole so placed, it would bring the land under tillage up to 5,180,100 acres, or to 10.30 acres per head of the population.

TABLE XI.—AGRICULTURAL STATISTICS, 1881-2.—PRODUCE OF CROPS.

Name of Colony.	Bushels Raised of—					Tons Raised of—		Gallons of Wine Made.
	Wheat.	Oats.	Barley.	Maize.	Other Cereals. ¹	Potatoes.	Hay.	
Victoria	8,714,377	3,612,111	927,566	81,007	614,321	134,290	238,766	539,491
New South Wales	3,495,066	350,566	135,218	4,030,950	17,208	44,323	198,532	513,688
South Australia	8,087,032	34,210	137,165	—	57,027	18,154	210,827	313,600
Queensland	30,612	1,121	3,207	1,313,655	—	11,684	19,649	72,121
Western Australia	153,657	8,270	39,700	432	5,120	550	28,314	—
Total	20,400,044	4,010,287	1,423,946	6,326,050	714,360	209,307	716,129	1,438,060
Tasmania	977,395	783,120	102,475	—	113,862	33,565	44,957	—
New Zealand	8,297,800	6,021,848	664,003	—	—	121,890	89,081	—
Grand Total	29,675,800	11,718,204	2,090,514	6,326,050	828,228	394,762	850,167	1,438,060
Tons per Acre of—								
Name of Colony.	Bushels per Acre of—					Potatoes.	Hay.	
	Wheat.	Oats.	Barley.	Maize.	Other Cereals. ¹			
	Victoria	6'40	24'57	16'07	45'43	23'57	3'43	1'13
New South Wales	15'35	21'81	21'04	41'97	15'46	2'78	1'35	
South Australia	4'57	10'60	11'47	—	12'48	2'96	1'72	
Queensland	8'41	12'71	12'53	28'25	—	2'36	1'16	
Western Australia	7'00	10'00	10'00	12'00	8'00	2'00	'75	
Total	6'93	23'97	17'47	38'16	21'29	3'14	'98	
Tasmania	18'88	28'44	22'20	—	19'25	3'47	1'29	
New Zealand	22'69	28'45	22'28	—	—	5'41	1'30	
Grand Total	8'83	26'74	19'04	38'16	20'99	3'69	1'02	

¹Including beans and peas, except in the case of New South Wales.

TABLE XII.—LIVE STOCK, 1881-2.

Name of Colony.	Number of—				Total.	Total Number of Stock of all Descriptions to the Square Mile.
	Horses.	Cattle.	Sheep.	Pigs.		
Victoria	275,516	1,286,267	10,306,285	244,039	12,164,004	138.41
New South Wales	304,300	2,182,229	30,501,686	308,205	30,446,723	127.59
South Australia.....	150,678	344,918	6,810,856	120,718	7,406,170	8.20
Queensland.....	194,217	3,618,513	8,292,883	56,438	12,162,051	18.20
Western Australia	31,755	63,000	1,267,912	22,530	1,385,206	1.42
Total	1,025,472	7,461,033	63,323,022	740,827	72,564,151	24.64
Tasmania	27,805	130,526	1,847,470	40,000	2,035,170	77.03
New Zealand	101,730	608,647	12,685,685	200,083	14,045,541	131.53
Grand Total	1,215,013	8,201,060	78,156,186	690,570	88,095,105	28.83

NOTE.—The Live Stock returns of Victoria and New Zealand are those obtained at the census of 1881. In the other colonies, except New South Wales, they were collected with the Agricultural Statistics in the months of February and March of the current year. For New South Wales the figures have been taken from the report of the Chief Inspector of Live Stock in that colony, except in the case of pigs, which have been derived from the returns of the census.

CALCUTTA INTERNATIONAL EXHIBITION, 1883-4.

South Australian Committee :

Honorable R. D. Ross, M.P., Chairman.

Honorable DAVID MURRAY, M.L.C.

JOHN HARVEY, Esq., J.P.

E. W. PITTS, Esq.

J. CURNOW, Esq., J.P.

W. HAINES, Esq., M.P.

SAMUEL DAVENPORT, Esq., J.P.

THOMAS HARDY, Esq.

A. M. SIMPSON, Esq., J.P.

ADAM ADAMSON, Sen., Esq., J.P.

J. F. CONIGRAVE, Esq., J.P.

F. MAKIN, Esq., J.P.

C. J. COATES, Secretary.

H. J. SCOTT, Representative at Calcutta.

SOUTH AUSTRALIAN EXHIBITS.

SECTION A.

1. HAMMER & CO. Photographs.
ADELAIDE. Opal Glass Pictures.
2. S. W. SWEET Landscape Photographs.
ADELAIDE.
3. M. W. GREENFELD Photographs.
NORWOOD. Paintings from Photographs.
4. GEORGE FREEMAN Photographs.
ADELAIDE.
5. S. A. INSTITUTE Photographs.
ADELAIDE.
6. FRAZER S. CRAWFORD Photographs.
ADELAIDE.
7. E. SPILLER (Government Printer) .. Photo-lithographs.
ADELAIDE.
8. PAUL FOELSCHKE Photographs.
NORTHERN TERRITORY, S A.
9. MRS. GEORGE GRAY Models of Fruits in Wax.
NORTH ADELAIDE.
10. SOUTH AUSTRALIAN COMMITTEE .. Models of Fruits in Wax.
ADELAIDE.

SECTION B.

11. **G. W. GOYDER** (Surveyor-General) .. Maps.
ADELAIDE.
12. **CONIGRAVE & COLLISON** Drawings and Maps.
ADELAIDE.
13. **BRADDOCK & SONS**.. .. Printing Inks.
ADELAIDE.
14. **E. SPILLER** (Government Printer) .. Lithography.
ADELAIDE. Letter-press Printing.
Bookbinding.
Account-book Ruling.
Chromo-lithography.
15. **J. A. HARTLEY** School Maps.
EDUCATION DEPARTMENT, ADELAIDE.
16. **H. C. MAIS, C.E.** Working Drawings and Photos.
ENGINEER-IN-CHIEF, ADELAIDE. of S.A. Railways.

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SECTION C.

17. **BRADDOCK & SONS** Eucalyptus Oil.
ADELAIDE.
18. **CHARLES CROSS** Medicinal Products.
GAWLER. Indigestion Powders.
Indigestion Drops.

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SECTION D.

19. **KAPUNDA MARBLE and BUILDING CO.** Marble.
KAPUNDA.
20. **KAPUNDA No. 1 MARBLE CO.** Marble.
KAPUNDA.
21. **SIBLEY'S MARBLE CO.** Marble.
ANGASTON.
22. **THOMPSON PRIEST** Flagging Slate.
MINTARO, S.A.
23. **HUGH FRASER** Carved Mantelpiece.
ADELAIDE.

SECTION E.

24. **V. NELSON** Fancy-work.
ADELAIDE.
25. **Mrs. G. J. NELSON** Ornaments from Seeds.
ADELAIDE.



SECTION F.

26. **BRADDOCK & SONS** Benzole.
ADELAIDE. Gold Lacqueur.
Brunswick Black.
27. **SOUTH AUSTRALIAN SALT, PLASTER,**
and MANURE CO. Refined Salt.
YORKETOWN. Coarse Salt.
Gypsum in Crystal.
Plaster of Paris.
Plaster Ornaments.
28. **THE S.A. SALT COMPANY** Fine Dried Salt.
SNOWTOWN. Fine Undried Salt.
Coarse Salt.
Gypsum "Selenite."
Plaster of Paris.
29. **WILLIAM HAINES, M.P.** Kaoline (pipeclay).
TEATREE GULLY, ADELAIDE.
30. **F. PFLAUM & CO.** Mimosa Bark.
BLUMBERG.
31. **SAMUEL DAVENPORT** Olive Oil.
BEAUMONT.
32. **G. L. BARNARD** Olive Oil.
WALKERVILLE. Refined Olive Oil.
33. **ANDERSON & ROBERTSON** Olives.
ADELAIDE. Olive Oil.
Olive Cake.
Olive Hair Oil.
Olive Oil Blacking.
Olive Machinery Oil.
Salad Oil.
New Dried Soap.
34. **J. G. PITCHER** Pearl Shells.
ADELAIDE.

Section F—continued.

35. **MAURICE HOLTZE** Peanut Oil.
FANNIE BAY, NORTHERN TERRITORY, S.A. Teal Oil.
Pine Fibre.
Rhea Fibre.
Indiarubber Tree.
Upland Cotton.
Uncultivated Cotton.
Indigo Plant.
Rhea Plant.
36. **KNOTT & MEYDER** Uncultivated Cotton.
HOWLEY, NORTHERN TERRITORY, S.A.
37. **G. R. McMINN, Esq.** (Acting Government Collection of Indigenous Woods.
Resident) **NORTHERN TERRITORY, S.A. :—**

A Collection of Indigenous Woods.

Stamped No. on Specimen.	Botanical Name.	Local Name.
I.	Acacia (spec.)	
II.	.....
III.	.....
IV.	.....
V.	.....	"Tecoma"
VI.	.....
VII.	.....	"Cypress Pine"
VIII.	.....	"White Mangrove"
IX.	.....
X.	.....	"Prickly Ash"
XI.	.....
XII.	.....	"Blood Wood"
XIII.	.....	"Paper Bark"
XIV.	.....
XV.	Sterculia (spec.)	"Milk Wood"
XVI.	Eucalyptus (spec.)	
XVII.	Eucalyptus (spec.)	
XVIII.	.....	"Iron Bark"
XIX.	.....
XX.	.....	"Apple Tree"
XXI.	Eucalyptus (spec.)	
XXII.	.....
XXIII.	Eucalyptus (spec.)	

38. **CORPORATION OF COPPER MINES OF** Copper Ores.
S.A. ADELAIDE.
39. **CAPTAIN HANCOCK** Copper Ores.
MOONTA.
40. **THE PROPRIETORS OF THE WALLAROO**
MINES, LIMITED Trophy of Copper in Cakes and
WALLAROO. Ingots.

Section F—continued.

41. **ENGLISH AND AUSTRALIAN COPPER COMPANY, LIMITED** Copper in Cakes and Ingots.
 PORT ADELAIDE. Refined Copper worked into Fancy Designs.
42. **JOHN SIMEON** Silver Lead Ore.
 ADELAIDE.
43. **UMBERUMBERKA SILVER LEAD MINING COMPANY** Silver Lead Ore.
 SOUTH AUSTRALIA.
44. **BAROSSA FLAX MILLING CO.** Flax.
 LYNDON VALLEY.
45. **THE HON. J. LANGDON PARSONS** .. Collection of Mineral Specimens
 MINISTER OF EDUCATION, ADELAIDE. from the Northern Territory.
46. **OLAF JANSEN** Auriferous Quartz.
 PINE CREEK, NORTHERN TERRITORY.
 Specimens (two) of auriferous quartz from Eleanor Reef, Pine Creek. Thickness of reef, from 6in. to 2ft.
The last 200 tons of stone crushed averaged 4ozs. of gold to the ton.
 Collection of small specimens of auriferous quartz from Eleanor Reef.
 Sample of auriferous quartz from Telegraph Reef, Pine Creek. Depth of workings, 40ft.; thickness of reef, 20in.; average yield, 1oz. 3dwts. of gold to the ton.
47. **THE ALTA GOLD MINING UNION** .. Auriferous Quartz.
 NORTHERN TERRITORY, S.A.
 Twenty-eight specimens of auriferous quartz from No. 5 North Union Reef. Thickness, 1ft.
The last crushing of 140 tons yielded 980ozs. of gold.
 Sample of auriferous quartz from No. 4 North Union. Thickness of reef, from 3in. to 12in. Average yield, 6ozs. of gold to the ton.
 Three specimens of auriferous quartz from No. 1 South Lady Alice Reef. Average yield, 1oz. 8dwts. of gold to the ton.
48. **PING QUE** Auriferous Quartz.
 UNION, NORTHERN TERRITORY, S.A.
 Seven specimens of auriferous quartz from No. 4 South Union Reef. This reef is vertical, and 8ft. in thickness. Average yield 1oz. 2dwts. of gold to the ton.
49. **STEPHEN McINTYRE** Auriferous Quartz.
 SENDERS HILL, NORTHERN TERRITORY, S.A.
 Four specimens of auriferous quartz. Reef 2ft. in thickness. Average yield 1oz. 6dwts. of gold to the ton.
50. **EXTENDED UNION GOLD MINING CO.** Auriferous Quartz.
 NORTHERN TERRITORY, S.A.
 Three specimens of auriferous quartz from No. 3 North Extended Union. Reef flat, 20in. wide. Average yield 2ozs. of gold to the ton.

Section F—continued.

51. ARNHEIM GOLD MINING CO. . . . Auriferous Quartz.

NORTHERN TERRITORY, S.A.

Five specimens of auriferous quartz from Spring Hill Reef, The Twelve Mile, McKinlay River, 120 miles inland. Vertical reef 7ft. to 9ft. in thickness, sunk 72ft., and opened out to a level of 104ft. 1,070 tons crushed averaged 1oz. 8dwts. to the ton.

52. D. B. TENNANT Auriferous Quartz.

NORTHERN TERRITORY, S.A.

Two samples of auriferous quartz from the Clifton Reef. Thickness, 2ft. Average yield, 6ozs. of gold to the ton.

Five samples of auriferous quartz from North Clifton Reef. Thickness, 1ft. 6in. Average yield 2ozs. of gold to the ton.

Samples of auriferous earth. From a "mullock" leader varying from 6in. to 12in. in thickness.

Although the gold is barely visible when the stuff is crushed, it yields over 5ozs. of gold to the ton.

53. BEETSON BROS. . . . Auriferous Quartz.

OLD HOWLEY, NORTHERN TERRITORY, S.A.

Collection of auriferous quartz. From reef averaging 22in. in thickness, and yielding $3\frac{1}{2}$ ozs. of gold to the ton.

Samples of tailings believed to retain a large quantity of gold. Also surface specimens of copper ore.

54. J. H. LAWRIE Auriferous Quartz.

NORTHERN TERRITORY, S.A.

Eight small specimens of auriferous quartz. From a reef adjoining the Arnheim Company's property at Spring Hill, McKinlay River.

This reef has just been opened, and presents indications of being exceedingly rich.

55. GROVE HILL GOLD MINING CO. . . Auriferous Quartz.

NORTHERN TERRITORY, S.A.

Specimens of auriferous quartz. From the Margaret and Yam Creek Claim (120 miles inland from Palmerston).

The Margaret specimens were taken from about six tons of quartz, which, when crushed, yielded over 220ozs. of gold. Those from Yam Creek gave 5ozs. to the ton. After the extraction of all the free gold from the stone by the usual process, the arsenical pyrites gave by assay from 150ozs. to 185ozs. of gold to the ton.

56. THE HON. J. LANGDON PARSONS . . Alluvial Gold.

MINISTER OF EDUCATION, ADELAIDE.

57. DANIELS & CO. . . . Tin Ores.

MOUNT WELLS, NORTHERN TERRITORY, S.A.

Large block of tin ore taken from the surface, and six samples of lode and one of stream tin.

A large number of lodes have been opened out, and the Mount bids fair to show, with further labor and prospecting, that its whole mass is interstratified with stanniferous deposits.

Section F—continued.

58. **CRUIKSHANK & BARRETT** Tin Ores.
 HOWLEY, NORTHERN TERRITORY, S.A.
 Samples of tin in coarse granite. The lode is 25ft. wide, standing 7ft. above the surrounding surface, and is traceable for a long distance. Assay test gives 37 per cent of tin.
59. **MOUNT WELLS TIN MINING CO.** .. Tin Ores.
 NORTHERN TERRITORY, S.A.
 Seven samples of tin ore. From the Company's property at Mount Wells (100 miles inland).
Specimen A taken from ground where there is a regular network of lodes varying from 1ft. 6in. to 3ft. in thickness. Samples of stream tin from land north of Mount Wells.
60. **EMIL MARKER & CO.** Copper Ores.
 PINE CREEK, NORTHERN TERRITORY, S.A.
 Eight specimens of copper ore from leased property on Copperfield Creek, 146 miles inland, near Pine Creek.
There is a large outcrop of copper at the surface, from 4ft. to 5ft. in thickness and traceable for a long distance.
61. **ADELAIDE TIN MINING CO.** Silver Lead Ore.
 NORTHERN TERRITORY, S.A.
 Six specimens of silver lead ore from the No. 2 Adelaide Company's property at Snadden's Creek, 115 miles inland. Lode about 2ft. in thickness, with a shaft sunk on it about 20ft. deep.
62. **THE HON. JOHN CROZIER** Wool.
 ADELAIDE.
63. **THE HON. G. C. HAWKER** Wool.
 BUNGAREE, S.A.
64. **J. H. ANGAS** Wool.
 COLLINGROVE.
65. **THE HON. A. B. MURRAY** Wool.
 MAGILL.
66. **SANDERS, JAMES, & CO.** Wool.
 CANOWIE.
67. **E. W. PITTS** Wool.
 DRY CREEK, S.A.
68. **JOHN MURRAY** Wool.
 MOUNT CRAWFORD, S.A.
69. **WM. CROZIER** Wool.
 MOORNA STATION, RIVER MURRAY.
70. **T. S. PORTER** Wool.
 O'HALLORAN HILL.

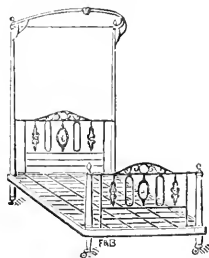
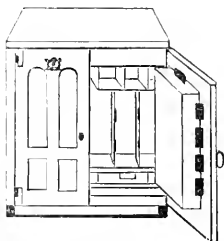
Section F—continued.

71. **DUFFIELD & MAKIN** Wool.
KOOONOONA STATION, S.A.
72. **W. H. BURFORD & SONS**.. .. Fancy Soaps.
ADELAIDE. .. Soap.
Tallow.
Oil.

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SECTION G.

73. **T. L. COTTRELL** C Spring Barouche.
ADELAIDE.
74. **CHAMBER OF MANUFACTURES** .. Model of Tramcar.
ADELAIDE.
75. **A. SIMPSON & SON**.. .. Fireproof Safe.
ADELAIDE. .. Japanned Toilet Ware,
Stamped Tinware.
Ice-water Urns.



[Messrs. A. Simpson & Son are the largest manufacturers of tinware in the Southern Hemisphere. The awards obtained by the firm include—Silver Medal of the South Australian Royal Agricultural and Horticultural Society; Certificate of Honor, at the International Exhibition at Paris, 1878; Silver Medal at the International Exhibition at Sydney, 1879; Silver Medal at the International Exhibition, Melbourne, 1880; Gold Medal, Perth International Exhibition, 1881. They manufacture iron and brass bedsteads, fenders, galvanized ironware, colonial ovens and boilers, fireproof safes, japanned toiletware, stamped seamless tinware.]

76. **DUNCAN & FRASER** Sporting Dogcart.
ADELAIDE.
77. **CLARKE BROS.** Four-wheeled Drag.
ADELAIDE.
78. **THOS. BARLOW & SONS** Wagonette.
ADELAIDE.

[T. Barlow & Sons are carriage builders to His Excellency Sir James Fergusson, Bombay, and have obtained medals at all the exhibitions during the last thirty years.]

Section G—continued.

79. **JAMES DUNCAN** Model of Patented Invention for
ADELAIDE. Change of Gauge on Railways.
[The patent-right for India is for sale. Particulars from H. J. Scott, at his office,
in the South Australian Court.]
80. **CONIGRAVE & COLLISON**.. .. . Hullett's Combination Truck, for
ADELAIDE. running on two different
gauges of Railway, without
any manipulation. The model
is constructed for 3ft. 6in.
and 5ft. 3in. gauges, used in
Australia.

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SECTION H.

81. **ALEX. MURRAY & SON** Jams and Jellies.
CRAIGLEE, COROMANDEL VALLEY. Biscuits.
82. **D. & J. FOTHERINGHAM**.. .. . Sauces.
GAWLER.
83. **EDWARD HAGUE** Dried Currants.
ANGASTON.
84. **THOS. HARDY** Dried Raisins.
BANKSIDE.
85. **ANDERSON & ROBERTSON** Vinegar.
ADELAIDE.
86. **C. MARGETTS** Tomato Sauce.
PARKSIDE.
87. **BARTON & CO.** Tomato Sauce.
HACKNEY. Pickles.
Curry Powder.
Condiments.
88. **MAGAREY & CO.** Flour.
HINDMARSH.
89. **THE ADELAIDE MILLING and MER-**
CANTILE CO. Flour.
ADELAIDE.
90. **THE AERATED BREAD CO.** Biscuits.
ADELAIDE.
91. **L. CONRAD** Preserved Meats.
ADELAIDE.

Section H—continued.

92. **THE AUSTRALIAN FRUIT and VEGE-
TABLE PRESERVING CO.** Jams and Jellies.
KENT TOWN, S.A. Preserved Fruits.
Preserved Vegetables.
93. **H. B. HANTON & CO.** Jams and Jellies.
FULLARTON, S.A. Tomato Sauce.
94. **THE ANGASTON PRESERVING CO.** .. Fruits preserved in Syrup.
ANGASTON, S.A.
95. **P. R. ALLEN & CO.** Sugar Cane.
DALY RIVER, NORTHERN TERRITORY, S.A.
96. **AH DIN CHIN** Sugar Cane.
MARGARET RIVER, NORTHERN TERRITORY, S.A.
97. **THE DE LISSAVILLE SUGAR CO.** .. Sugar Cane.
NORTHERN TERRITORY, S.A.
Estimated to yield three tons of sugar per acre.
Sugar.
Open-pan evaporation and concentration. From eight months' ratoon canes.
Grown on very red ironstone land.
98. **MAURICE HOLTZE** Preserved Banana and Safflower.
FANNIE BAY, NORTHERN TERRI- Tapioca.
TORY, S.A. Mandioca.
Arrowroot.
Pulse.
Dhol.
Rice.
Maize.
Pea Nuts.
Cassava Root.
99. **E. C. HUGHES, S.M.** Trepang.
NORTH ADELAIDE.
100. **THOMAS HARDY** Wines.
BANKSIDE, S.A.
Winner of the Industrial Prize, Adelaide International Exhibition, and upwards of 180 other prizes, medals, and cups, at exhibitions in London, Paris, Vienna, Philadelphia, Bordeaux, Sydney, Melbourne, and New Zealand.
101. **B. SEPPELT** Wines.
SEPPELTSPFELD, S.A.
Prizes awarded at London, Paris, Sydney, Melbourne, Adelaide, and Bordeaux.
102. **THE AULDANA VINEYARD PROPRIE-
TORS (W. P. Auld, Manager)**.. .. Wines.
The Auldana wines were awarded the special prize (a silver cup) at the wine show open to all the colonies for the best white wine of a light character; gold, silver, and bronze medals at London, 1861 and 1872; Paris, Vienna, Amsterdam, Sydney, Melbourne, 1867 and 1881; Philadelphia, Bordeaux, Adelaide, and New Zealand.

Section H—continued.

103. **SAMUEL DAVENPORT** Wines.
BEAUMONT, S.A.
Prizes awarded—London, Paris, Vienna, Philadelphia, Bordeaux,
Adelaide, Sydney, Melbourne, and New Zealand.
104. **SIR THOMAS ELDER** Wines.
BIRKSGATE, S.A.
Prizes awarded—London, Paris, Vienna, Philadelphia, Bordeaux,
Adelaide, Sydney, and Melbourne.
105. **THE HON. JNO. CROZIER** Wines.
OAKLANDS, S.A.
Prizes awarded—London, Paris, Vienna, Philadelphia, Ontario
(Canada), Bordeaux, Melbourne, and Sydney.
106. **PENFOLD & CO.** Wines.
THE GRANGE, MAGILL, S.A.
Prizes awarded—London, Paris, Philadelphia, Sydney, Mel-
bourne, Adelaide, and Bordeaux.
107. **WM. GILBERT** Wines.
PEWSEY VALE, S.A.
Prizes awarded—London, Paris, Philadelphia, Sydney, Mel-
bourne, Adelaide, and Bordeaux.
108. **WM. JACOBS** Wines.
MOOROOKOO, S.A.
Prizes awarded—London, Paris, Philadelphia, Sydney, Mel-
bourne, Adelaide, and Bordeaux.
109. **C. B. YOUNG** Wines.
WALKERVILLE.
Prizes awarded—London, Paris, Philadelphia, Sydney, Mel-
bourne, Adelaide, Bordeaux, and New Zealand.
110. **S. SMITH & SON** Wines.
YALCUMBA, ANGASTON, S.A.
Prizes awarded for full-bodied wines at London, Paris, Phila-
delphia, Sydney, Melbourne, Adelaide, and Bordeaux.
111. **E. SALTER & SON** Wines
SALTRAM, ANGASTON, S.A.
Winner of the prize cup for full-bodied wines, Adelaide;
London, Paris, Philadelphia, Sydney, Melbourne, and Bordeaux.
112. **PHILLIPSON BROTHERS** Ale and Stout.
ADELAIDE.

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SECTION I.

113. **J. G. RAMSAY & CO.** Stripping Machine.
MOUNT BARKER.
114. **A. W. DOBBIE** Hand-power Seed-sower
ADELAIDE. Horse-power Seed-sower.

Section I—continued.

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|------|------------------------------------|----|----|----|---------------------------------|
| 115. | J. W. STOTT & SON | .. | .. | .. | Stump and Stone Jumping Plough. |
| | ALMA. | | | | |
| 116. | J. MARTIN & SON | .. | .. | .. | Tenoning Machine. |
| | GAWLER. | | | | |
| 117. | MELLOR BROTHERS | .. | .. | .. | Stripping Machines. |
| | ADELAIDE, KAPUNDA, AND QUORN. | | | | Stump Plough. |
| 118. | THOMAS ASHBY | .. | .. | .. | Tuscan Wheat. |
| | CLARE, S.A. | | | | Lion Defiance Wheat. |
| 119. | JOSEPH THYER | .. | .. | .. | Purple Wheat. |
| | BELALIE, S.A. | | | | |
| 120. | ALLAN BELL | .. | .. | .. | White Tuscan Wheat. |
| | MOUNT BARKER, S.A. | | | | Purple-straw Wheat. |
| 121. | D. M. McFARLANE | .. | .. | .. | White Tuscan Wheat. |
| | PORT LINCOLN, S.A. | | | | |
| 122. | J. H. ANGAS | .. | .. | .. | Purple-straw Wheat. |
| | COLLINGROVE, S.A. | | | | White Tuscan Wheat. |
| | | | | | White Lammas Wheat. |
| | | | | | Skinless Oats. |
| 123. | E. & W. HACKETT | .. | .. | .. | White Tuscan Wheat. |
| | ADELAIDE. | | | | Skinless Barley. |
| | | | | | White Oats. |
| 124. | S.A. SALT, PLASTER, and MANURE CO. | | | | Gypsum Manure. |
| | YORKETOWN. | | | | |

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SECTION K.

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| 125. | SOUTH AUSTRALIAN INSTITUTE | .. | | | Stuffed Specimens of Emu and Kangaroo. |
| | ADELAIDE. | | | | |
| 126. | DR. HAACKE | .. | .. | .. | Specimens of Natural History. |
| | ADELAIDE. | | | | |
| 127. | W. MALCOLM | .. | .. | .. | Ostrich Feathers. |
| | GAWLER. | | | | Ostrich Eggs. |
| 128. | R. E. MINCHIN | .. | .. | .. | Live Emus. |
| | ADELAIDE. | | | | Emu Eggs. |
| 129. | THOMAS BOWMAN | .. | .. | .. | Ostrich Eggs. |
| | CAMPBELL PARK, LAKE ALBERT, S.A. | | | | |

PLE PRODUCE EXPORTED.

SHIPPING—
INWARDS and
OUTWARDS.

Breadstuffs.	Wool.	Minerals.	Number.	Tonnage	RAINFALL.	YEAR.
£	£	£			Inches.	
—	—	—	9	2,592	—	1836
—	—	—	—	—	—	1837
—	770	—	—	—	—	1838
—	350	—	—	—	19·84	1839
—	8,740	—	425	83,787	24·23	1840
—	35,845	—	197	37,036	17·96	1841
—	22,036	—	150	25,354	20·32	1842
—	45,568	127	104	15,553	17·19	1843
—	42,769	6,436	139	18,489	16·88	1844
—	72,235	19,020	225	26,558	18·83	1845
—	106,510	143,231	278	49,509	26·89	1846
—	56,130	174,017	301	62,641	27·61	1847
—	98,582	320,624	412	90,956	19·74	1848
—	108,539	219,775	549	155,920	25·44	1849
38,312	131,731	365,464	559	174,455	19·51	1850
73,359	148,731	310,916	538	155,002	30·63	1851
212,566	115,036	374,778	739	202,507	27·34	1852
198	9,282	1859				
210	9,843	1860				
219	10,711	1861				
227	11,417	1862				
247	11,769	1863				
267	12,959	1864				
279	13,686	1865				
292	14,690	1866				
308	14,600	1867				
325	15,657	1868				
330	16,328	1869				
300	15,108	1870				
307	15,791	1871				
307	15,123	1872				
315	17,222	1873				
320	17,426	1874				
268	16,765	1875				
281	25,889	1876				
343	27,305	1877				
341	34,491	1878				
348	35,276	1879				
370	36,277	1880				
405	36,888	1881				

STATISTICAL SUMMARY OF SOUTH AUSTRALIA FROM ITS FOUNDATION

[illegible]

As we will see, all natural, meaningful, to be called $\alpha_{112}^{(1)}, \alpha_{112}^{(2)}, \dots$

1876	513,840	115,699
1877	546,556	176,687
1878	613,642	233,253
1879	635,641	233,368
1880	700,498	252,540
1881	645,008	221,888
1873	64,218	3,554
1874	70,331	3,592
1875	77,347	4,478
1876	85,509	5,760
1877	105,049	8,744
1878	117,489	9,618
1879	106,864	3,607
1880	120,881	10,944
1881	128,075	4,708
1873	1,225,073	784,784
1874	1,330,484	839,638
1875	1,444,586	898,820
1876	1,514,916	1,083,732
1877	1,828,115	1,163,646
1878	2,011,319	1,305,851
1879	2,271,058	1,458,096
1880	2,574,489	1,733,542
1881	2,613,903	1,768,781
1873	51,724	25,697
1874	45,292	23,427
1875	47,571	21,561
1876	45,933	18,769
1877	50,591	22,834
1878	51,065	23,008
1879	65,492	25,762
1880	63,903 ¹¹	27,687
1881	53,353	21,951
1873	167,931	58,610
1874	326,486	57,633
1875	332,824	42,745
1876	332,558	38,977
1877	348,841	46,719
1878	355,493	48,392
1879	366,497	45,215
1880	373,299	50,022
1881	374,374	51,757
1873	376,156	132,428
1874	540,844	105,674
1875	607,138	90,804
1876	787,824	141,614
1877	959,528	243,406
1878	1,134,185	264,577
1879	1,237,591	270,198
1880	1,029,764	324,933
1881	1,319,460 ¹²	365,715

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SUMMARY OF AUSTRALASIAN STATISTICS FROM 1873 TO 1881, INCLUSIVE

iii.

Name of Colony	Area in square Miles	Year	Population in 1st December	Births	Deaths	Marriages	Immigrants in Nov.	Emigrants in Nov.	Public Revenue		Public Debt in 1st December	Exp. of 1st Dec.	Shipping Tonnage net of each year		Miles of Railways in 1st Dec.	Miles of Telegraph line in 1st Dec.	Crown Land sold to the end of each year	
									Total	Proportion by Election			Arrival	Depart			Total Amount Allocated	Total Amount received
Victoria	87,394	1873	752,031	29,000	11,501	10,751	24,600	26,204	1,011,135	1,011,135	1,011,135	1,011,135	1,011,135	1,011,135	1,011,135	1,011,135	1,011,135	1,011,135
		1874	761,412	29,500	12,000	10,800	25,100	26,700	1,020,242	1,020,242	1,020,242	1,020,242	1,020,242	1,020,242	1,020,242	1,020,242	1,020,242	1,020,242
		1875	770,799	30,000	12,500	11,300	25,600	27,200	1,029,354	1,029,354	1,029,354	1,029,354	1,029,354	1,029,354	1,029,354	1,029,354	1,029,354	1,029,354
		1876	780,186	30,500	13,000	11,800	26,100	27,700	1,038,466	1,038,466	1,038,466	1,038,466	1,038,466	1,038,466	1,038,466	1,038,466	1,038,466	1,038,466
		1877	790,573	31,000	13,500	12,300	26,600	28,200	1,047,578	1,047,578	1,047,578	1,047,578	1,047,578	1,047,578	1,047,578	1,047,578	1,047,578	1,047,578
		1878	800,960	31,500	14,000	12,800	27,100	28,700	1,056,690	1,056,690	1,056,690	1,056,690	1,056,690	1,056,690	1,056,690	1,056,690	1,056,690	1,056,690
		1879	811,347	32,000	14,500	13,300	27,600	29,200	1,065,802	1,065,802	1,065,802	1,065,802	1,065,802	1,065,802	1,065,802	1,065,802	1,065,802	1,065,802
		1880	821,734	32,500	15,000	13,800	28,100	29,700	1,074,914	1,074,914	1,074,914	1,074,914	1,074,914	1,074,914	1,074,914	1,074,914	1,074,914	1,074,914
		1881	832,121	33,000	15,500	14,300	28,600	30,200	1,084,026	1,084,026	1,084,026	1,084,026	1,084,026	1,084,026	1,084,026	1,084,026	1,084,026	1,084,026
		1881	842,508	33,500	16,000	14,800	29,100	30,700	1,093,138	1,093,138	1,093,138	1,093,138	1,093,138	1,093,138	1,093,138	1,093,138	1,093,138	1,093,138
New South Wales	194,175	1873	255,244	7,011	3,101	1,184	21,022	23,713	1,182,542	1,182,542	1,182,542	1,182,542	1,182,542	1,182,542	1,182,542	1,182,542	1,182,542	1,182,542
		1874	265,629	7,512	3,602	1,285	21,523	24,214	1,191,654	1,191,654	1,191,654	1,191,654	1,191,654	1,191,654	1,191,654	1,191,654	1,191,654	1,191,654
		1875	276,014	8,013	4,103	1,386	22,034	24,725	1,200,766	1,200,766	1,200,766	1,200,766	1,200,766	1,200,766	1,200,766	1,200,766	1,200,766	1,200,766
		1876	286,400	8,514	4,604	1,487	22,545	25,236	1,209,878	1,209,878	1,209,878	1,209,878	1,209,878	1,209,878	1,209,878	1,209,878	1,209,878	1,209,878
		1877	296,785	9,015	5,105	1,588	23,056	25,747	1,218,990	1,218,990	1,218,990	1,218,990	1,218,990	1,218,990	1,218,990	1,218,990	1,218,990	1,218,990
		1878	307,170	9,516	5,606	1,689	23,567	26,258	1,228,102	1,228,102	1,228,102	1,228,102	1,228,102	1,228,102	1,228,102	1,228,102	1,228,102	1,228,102
		1879	317,555	10,017	6,107	1,790	24,078	26,769	1,237,214	1,237,214	1,237,214	1,237,214	1,237,214	1,237,214	1,237,214	1,237,214	1,237,214	1,237,214
		1880	327,940	10,518	6,608	1,891	24,589	27,280	1,246,326	1,246,326	1,246,326	1,246,326	1,246,326	1,246,326	1,246,326	1,246,326	1,246,326	1,246,326
		1881	338,325	11,019	7,109	1,992	25,100	27,791	1,255,438	1,255,438	1,255,438	1,255,438	1,255,438	1,255,438	1,255,438	1,255,438	1,255,438	1,255,438
		1881	348,710	11,520	7,610	2,093	25,611	28,302	1,264,550	1,264,550	1,264,550	1,264,550	1,264,550	1,264,550	1,264,550	1,264,550	1,264,550	1,264,550
Queensland	168,241	1873	136,079	5,209	2,400	1,004	15,411	16,712	1,004,332	1,004,332	1,004,332	1,004,332	1,004,332	1,004,332	1,004,332	1,004,332	1,004,332	1,004,332
		1874	146,464	5,710	2,901	1,105	15,922	17,223	1,013,444	1,013,444	1,013,444	1,013,444	1,013,444	1,013,444	1,013,444	1,013,444	1,013,444	1,013,444
		1875	156,849	6,211	3,402	1,206	16,433	17,724	1,022,556	1,022,556	1,022,556	1,022,556	1,022,556	1,022,556	1,022,556	1,022,556	1,022,556	1,022,556
		1876	167,234	6,712	3,903	1,307	16,944	18,225	1,031,668	1,031,668	1,031,668	1,031,668	1,031,668	1,031,668	1,031,668	1,031,668	1,031,668	1,031,668
		1877	177,619	7,213	4,404	1,408	17,455	18,736	1,040,780	1,040,780	1,040,780	1,040,780	1,040,780	1,040,780	1,040,780	1,040,780	1,040,780	1,040,780
		1878	188,004	7,714	4,905	1,509	17,966	19,247	1,049,892	1,049,892	1,049,892	1,049,892	1,049,892	1,049,892	1,049,892	1,049,892	1,049,892	1,049,892
		1879	198,389	8,215	5,406	1,610	18,477	19,758	1,059,004	1,059,004	1,059,004	1,059,004	1,059,004	1,059,004	1,059,004	1,059,004	1,059,004	1,059,004
		1880	208,774	8,716	5,907	1,711	18,988	20,269	1,068,116	1,068,116	1,068,116	1,068,116	1,068,116	1,068,116	1,068,116	1,068,116	1,068,116	1,068,116
		1881	219,159	9,217	6,408	1,812	19,499	20,780	1,077,228	1,077,228	1,077,228	1,077,228	1,077,228	1,077,228	1,077,228	1,077,228	1,077,228	1,077,228
		1881	229,544	9,718	6,909	1,913	20,010	21,291	1,086,340	1,086,340	1,086,340	1,086,340	1,086,340	1,086,340	1,086,340	1,086,340	1,086,340	1,086,340
South Australia	93,345	1873	148,005	7,102	3,201	1,102	14,005	15,106	1,005,106	1,005,106	1,005,106	1,005,106	1,005,106	1,005,106	1,005,106	1,005,106	1,005,106	1,005,106
		1874	158,390	7,603	3,702	1,203	14,516	15,617	1,014,218	1,014,218	1,014,218	1,014,218	1,014,218	1,014,218	1,014,218	1,014,218	1,014,218	1,014,218
		1875	168,775	8,104	4,203	1,304	15,027	16,128	1,023,330	1,023,330	1,023,330	1,023,330	1,023,330	1,023,330	1,023,330	1,023,330	1,023,330	1,023,330
		1876	179,160	8,605	4,704	1,405	15,538	16,639	1,032,442	1,032,442	1,032,442	1,032,442	1,032,442	1,032,442	1,032,442	1,032,442	1,032,442	1,032,442
		1877	189,545	9,106	5,205	1,506	16,049	17,150	1,041,554	1,041,554	1,041,554	1,041,554	1,041,554	1,041,554	1,041,554	1,041,554	1,041,554	1,041,554
		1878	200,930	9,607	5,706	1,607	16,560	17,661	1,050,666	1,050,666	1,050,666	1,050,666	1,050,666	1,050,666	1,050,666	1,050,666	1,050,666	1,050,666
		1879	211,315	10,108	6,207	1,708	17,071	18,172	1,059,778	1,059,778	1,059,778	1,059,778	1,059,778	1,059,778	1,059,778	1,059,778	1,059,778	1,059,778
		1880	221,700	10,609	6,708	1,809	17,582	18,683	1,068,890	1,068,890	1,068,890	1,068,890	1,068,890	1,068,890	1,068,890	1,068,890	1,068,890	1,068,890
		1881	232,085	11,110	7,209	1,910	18,093	19,194	1,078,002	1,078,002	1,078,002	1,078,002	1,078,002	1,078,002	1,078,002	1,078,002	1,078,002	1,078,002
		1881	242,470	11,611	7,710	2,011	18,604	19,705	1,087,114	1,087,114	1,087,114	1,087,114	1,087,114	1,087,114	1,087,114	1,087,114	1,087,114	1,087,114
Western Australia	95,620	1873	25,704	809	415	104	295	330	134,812	134,812	134,812	134,812	134,812	134,812	134,812	134,812	134,812	134,812
		1874	26,009	876	485	181	360	401	135,924	135,924	135,924	135,924	135,924	135,924	135,924	135,924	135,924	135,924
		1875	26,304	943	552	192	435	476	137,036	137,036	137,036	137,036	137,036	137,036	137,036	137,036	137,036	137,036
		1876	26,609	1,010	619	203	510	551	138,148	138,148	138,148	138,148	138,148	138,148	138,148	138,148	138,148	138,148
		1877	27,004	1,077	686	214	585	626	139,260	139,260	139,260	139,260	139,260	139,260	139,260	139,260	139,260	139,260
		1878	27,409	1,144	753	225	660	701	140,372	140,372	140,372	140,372	140,372	140,372	140,372	140,372	140,372	140,372
		1879	27,814	1,211	820	236	735	776	141,484	141,484	141,484	141,484	141,484	141,484	141,484	141,484	141,484	141,484
		1880	28,219	1,278	887	247	810	851	142,596	142,596	142,596	142,596	142,596	142,596	142,596	142,596	142,596	142,596
		1881	28,624	1,345	954	258	885	926	143,708	143,708	143,708	143,708	143,708	143,708	143,708	143,708	143,708	143,708
		1881	29,029	1,412	1,021	269	960	1,001	144,820	144,820	144,820	144,820	144,820	144,820	144,820	144,820	144,820	144,820
Tasmania	26,375	1873	30,412	1,000	400	100	1,000	1,100	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
		1874	30,817	1,050	450	110	1,050	1,150	1,010,000	1,010,000	1,010,000	1,010,000	1,010,000	1,010,000	1,010,000	1,010,000	1,010,000	1,010,000
		1875	31,222	1,100	500	120	1,100	1,200	1,020,000	1,020,000	1,020,000	1,020,000	1,020,000	1,020,000	1,020,000	1,020,000	1,020,000	1,020,000
		1876	31,627	1,150	550	130	1,150	1,250	1,030,000	1,030,000	1,030,000	1,030,000	1,030,000	1,030,000	1,030,000	1,030,000	1,030,000	1,030,000
		1877	32,032	1,200	600	140	1,200	1,300	1,040,000	1,040,000	1,040,000	1,040,000	1,040,000	1,040,000	1,040,000	1,040,000	1,040,000	1,040,000
		1878	32,437	1,250	650	150	1,250	1,350	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1				

Name of Colony		ANNUAL EXPORTS																				* LBS. SHIPS		
		Total Cultivation		Wheat		Oats		Barley		Maize		Other Cereals		Fruit		Wool		Hides		Lumber		Other		
		Year	Area	Acres	Barrels	Acres	Barrels	Acres	Barrels	Acres	Barrels	Acres	Barrels	Acres	Barrels	Acres	Barrels	Acres	Barrels	Acres	Barrels	Acres	Barrels	Acres
Victoria	1871	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1872	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1873	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1874	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1875	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1876	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1877	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1878	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1879	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1880	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
New South Wales	1871	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1872	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1873	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1874	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1875	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1876	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1877	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1878	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1879	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1880	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
Queensland	1871	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1872	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1873	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1874	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1875	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1876	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1877	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1878	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1879	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1880	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
South Australia	1871	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1872	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1873	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1874	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1875	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1876	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1877	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1878	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1879	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1880	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
Western Australia	1871	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	100,000
	1872	3,000,000	340,000	4,722,280	100,000	1,741,431	25,333	300,000	1,000	40,000	14,000	200,000	35,000	115,000	142,100	5,222	900,000	30,000	100,000	100,000	100,000	100,000	100,000	

* Including brown and beige, except in the case of Navy, in which White.

⁹ Including land under permanent artificial grass, in all the colonies except Western Australia (where green forage is included with hay) and New Zealand.

² Including land in fallow in most of the colonies. The tests in the 1980s were of

The latest available figures relating to Live Stock in Victoria and New Zealand are those derived from the returns of the Census of 1986. In the

where asterisks occur the information has not been

¹⁵ See, for example, Barrett, *has been* (second time) Western Australia, the province of the various clays.

¹³ No returns having been received from Western Australia or the province of the Cape Colony, the 1854 data have been estimated according to the average in 1853.

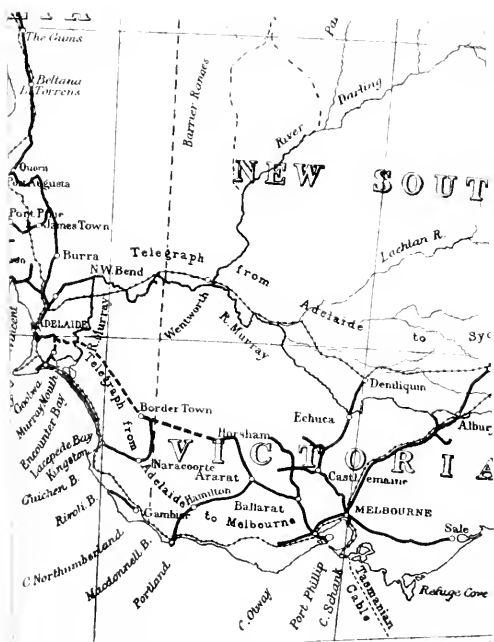
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9,934	29,159	357,990	3,134,000	44,302,530	199,950
1,516	30,715	366,703	3,131,013	24,503,388	173,604
5,073	30,360	328,150	2,746,385	20,962,244	191,677
0,249	34,015	336,468	2,771,583	23,967,053	220,320
4,644	35,503	360,038	2,914,210	29,043,392	256,026
2,301	44,637	395,984	2,580,040	32,399,547	308,205
5,825	40,832	364,306	2,182,226	36,591,986	
1,894	27,306	99,243	1,343,093	7,268,946	42,884
3,359	22,173	107,507	1,610,105	7,180,792	44,517
2,863	18,354	121,497	1,812,576	7,227,774	46,447
4,821	18,349	133,625	2,079,979	7,315,074	53,455
0,771	24,513	140,174	2,299,582	6,272,766	52,371
6,875	27,061	148,226	2,469,555	5,631,634	50,301
7,585	27,935	163,342	2,805,984	6,083,034	64,686
0,815	34,214	179,152	3,162,752	6,935,967	66,248
1,634	41,735	194,217	3,618,513	8,292,883	56,438
7,469	247,785	87,455	174,381	5,617,419	87,336
7,076	276,697	93,122	185,342	6,120,211	78,019
7,261	313,700	107,164	219,240	6,179,395	100,562
5,268	276,874	106,903	219,441	6,133,291	102,295
6,265	375,430	110,684	230,679	6,098,359	104,527
0,033	428,128	121,553	251,862	6,377,812	103,422
3,996	478,879	130,052	266,217	6,140,396	90,548
5,763	500,858	157,915	307,177	6,463,897	131,011
8,891	452,834	159,678	314,918	6,810,856	120,718
—	693	26,290	47,640	748,536	20,948
—	512	26,636	46,748	777,861	13,290
—	—	29,379	50,416	881,861	14,420
—	—	33,502	54,058	899,494	18,108
—	594	30,691	52,057	797,156	18,942
—	—	32,801	56,158	809,325	16,762
—	9,668	32,411	60,617	1,109,860	20,397
—	6,942	34,568	63,719	1,231,717	24,232
—	970	31,755	63,009	1,267,912	22,530
1,565	40,250	22,612	106,308	1,490,746	59,628
4,234	93,608	23,208	110,450	1,724,953	51,468
3,167	100,168	23,473	118,694	1,731,723	47,664
4,978	103,855	23,622	124,459	1,768,785	60,681
0,376	111,950	22,195	126,882	1,818,125	55,652
8,478	108,580	24,107	126,276	1,838,831	39,595
8,690	107,201	24,593	129,317	1,835,970	38,610
4,656	112,003	25,267	127,187	1,783,611	48,029
7,681	102,438	27,805	130,526	1,847,479	49,660
5,515	24,131	—	—	—	—
—	196,019	99,859	494,917	11,704,853	123,921
0,883	225,351	—	—	—	—
2,459	369,391	—	—	—	—
—	440,411	—	—	—	—
9,187	443,907	137,768	578,430	13,069,338	207,337
8,584	437,856	—	—	—	—
1,154	312,914	—	—	—	—
1,431	528,156	161,736	698,637	12,985,085	200,083

less in 1880 than in 1879.

Cereals crops in 1880, these have been estimated according to the averages

a
colonies is classed with green forage is not considered as under cultiva-



AUSTRALIA



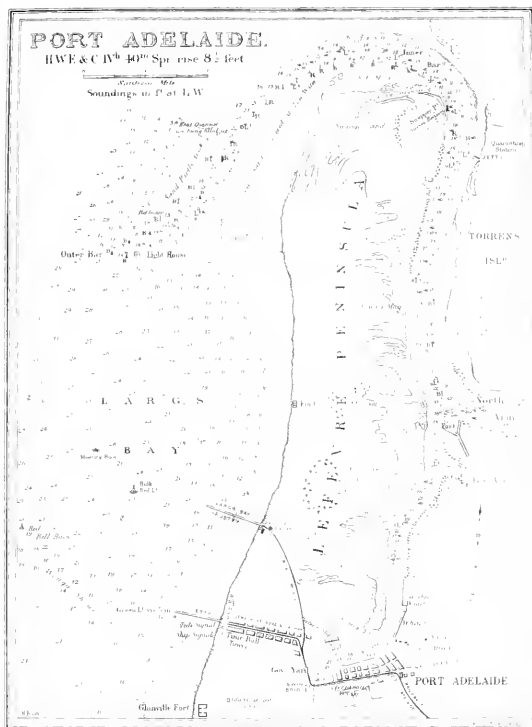


PORT ADELAIDE.

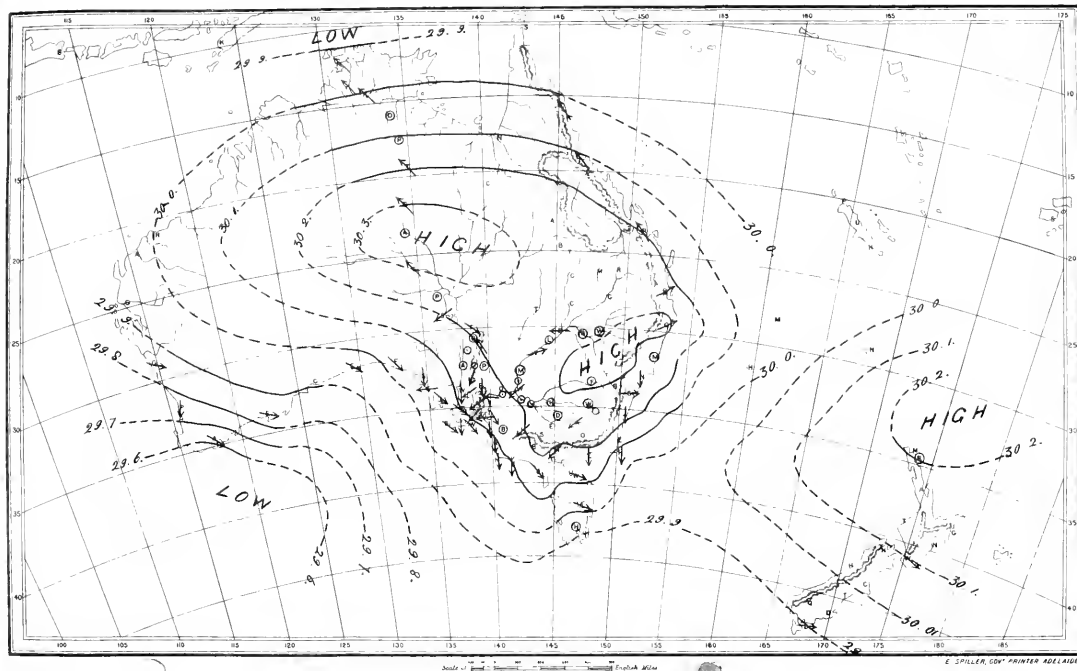
H.W. & C.V. 40th Spr. rise 8 1/2 feet

Northward 40.0

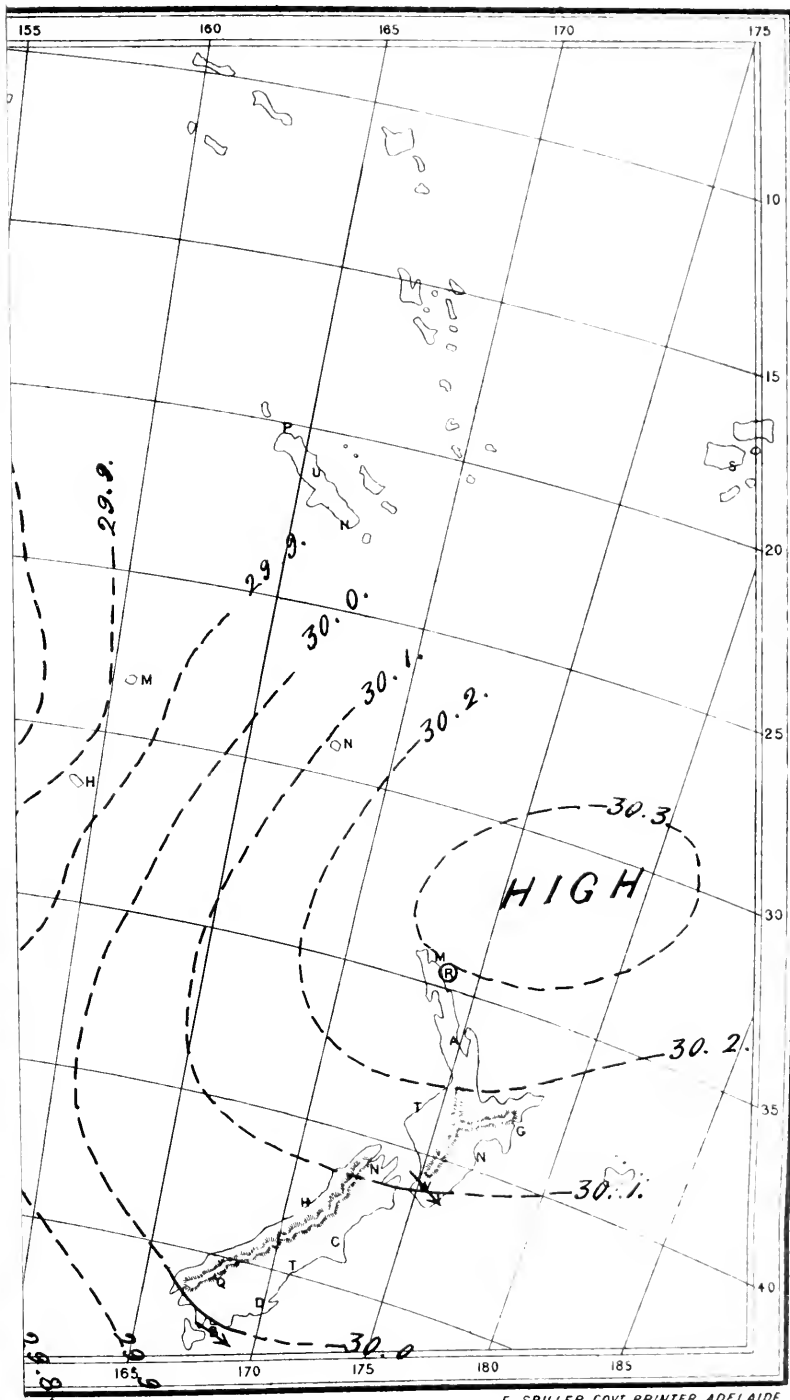
Soundings in f' at L.W.



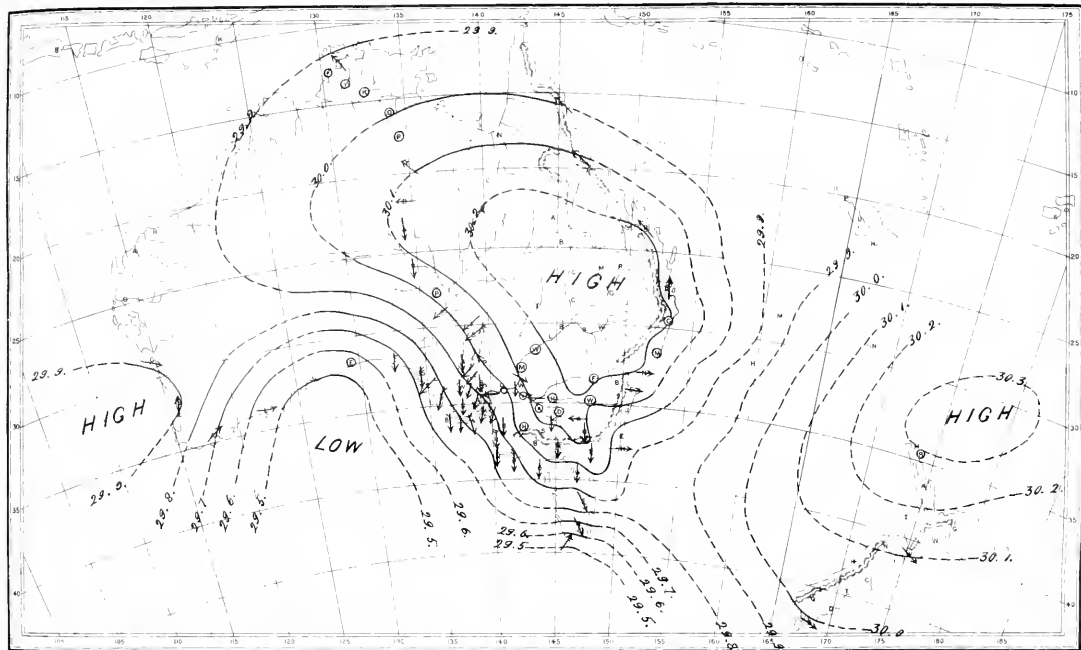
Weather Map of AUSTRALASIA at 9 a.m. 9 AUG¹ 1883.



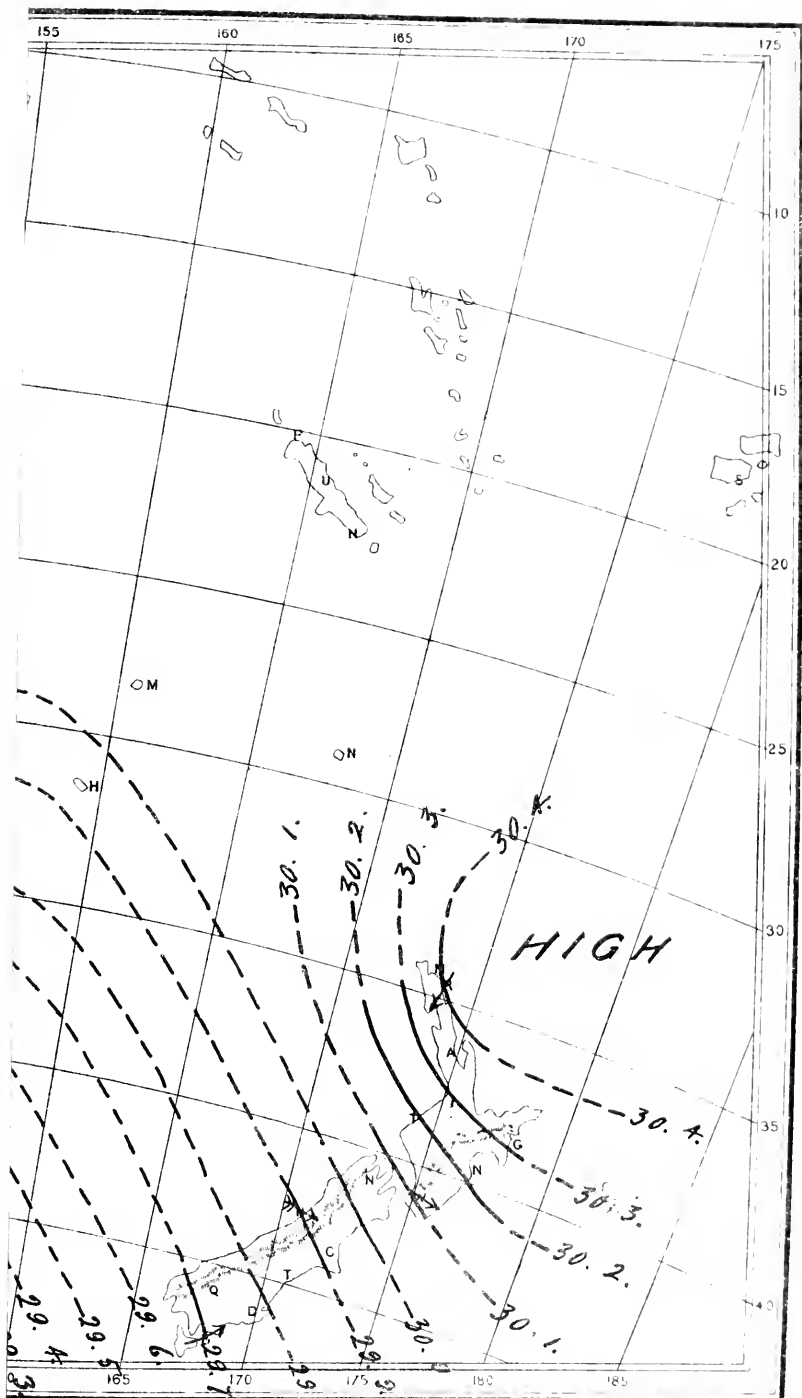
JG T 188 3.



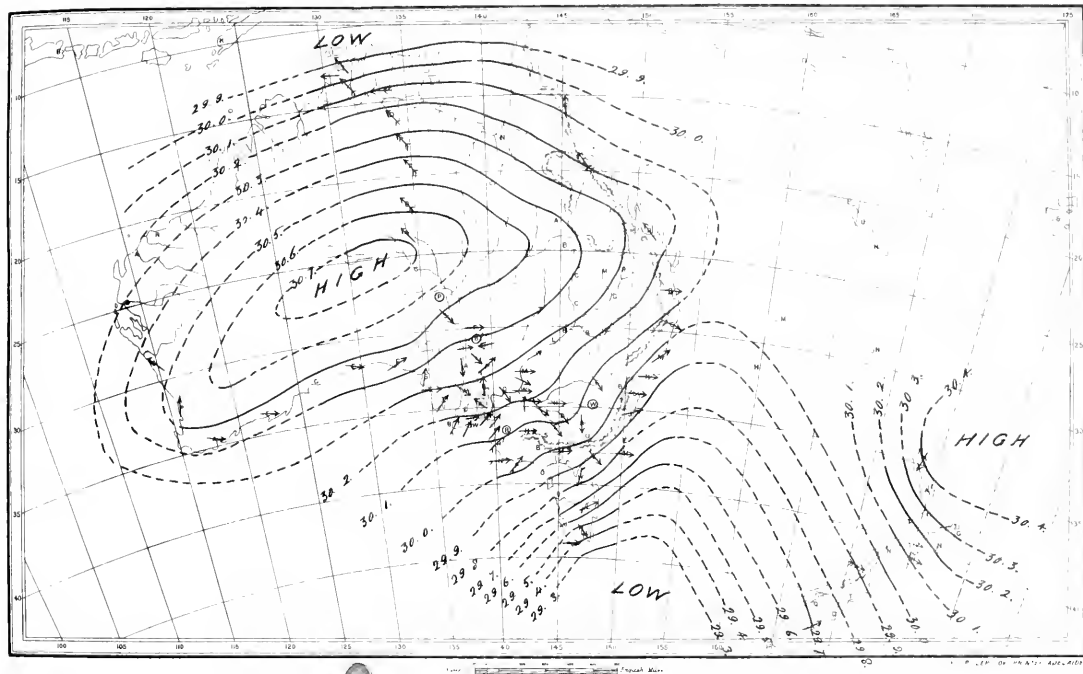
Weather Map of AUSTRALASIA at 9 a.m. 10 AUG 1883.



JUG I 1883.

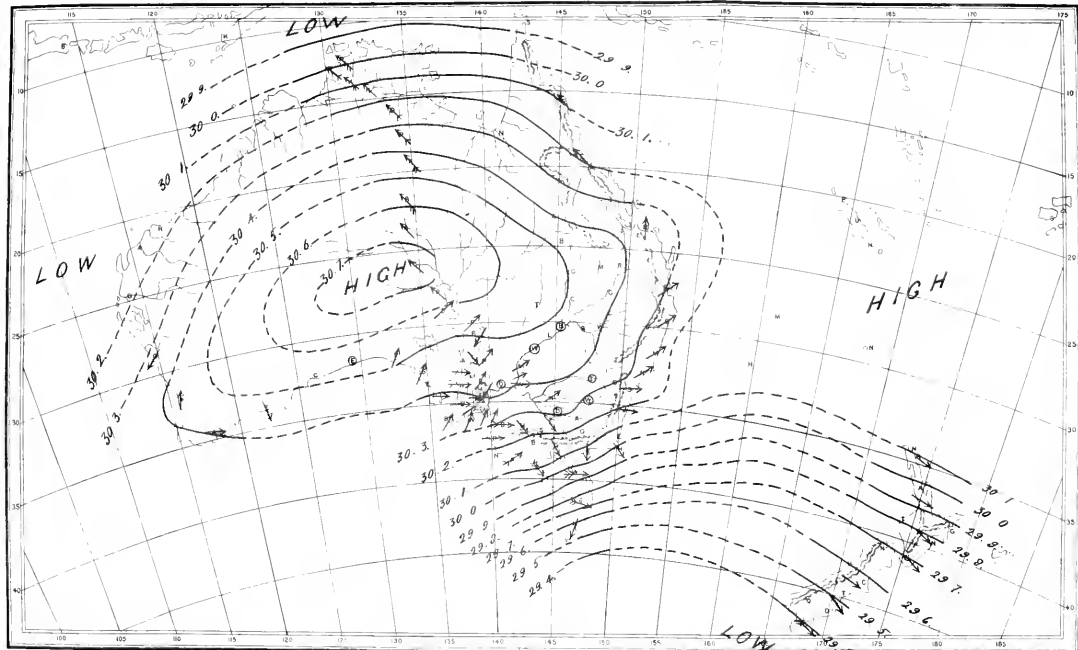


Weather Map of AUSTRALASIA at 9 a.m. 13. AUG \mp 1883.



[illegible]

Weather Map of AUSTRALASIA at 9 a.m. 14. AUG 1883.



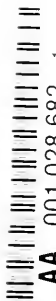


OCT 26 1955

THE LIBRARY
UNIVERSITY OF CALIFORNIA
LOS ANGELES

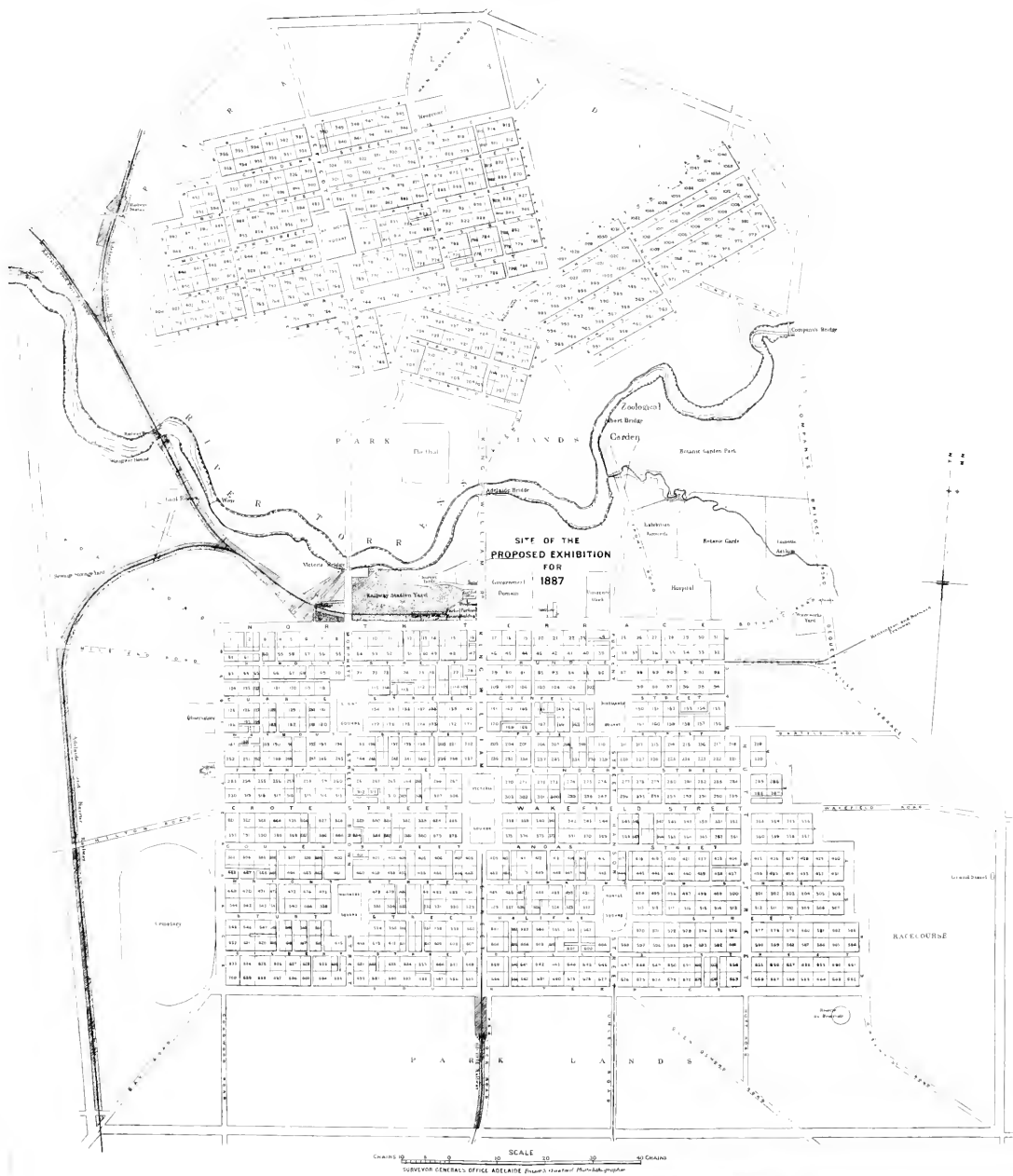


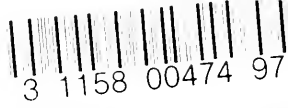
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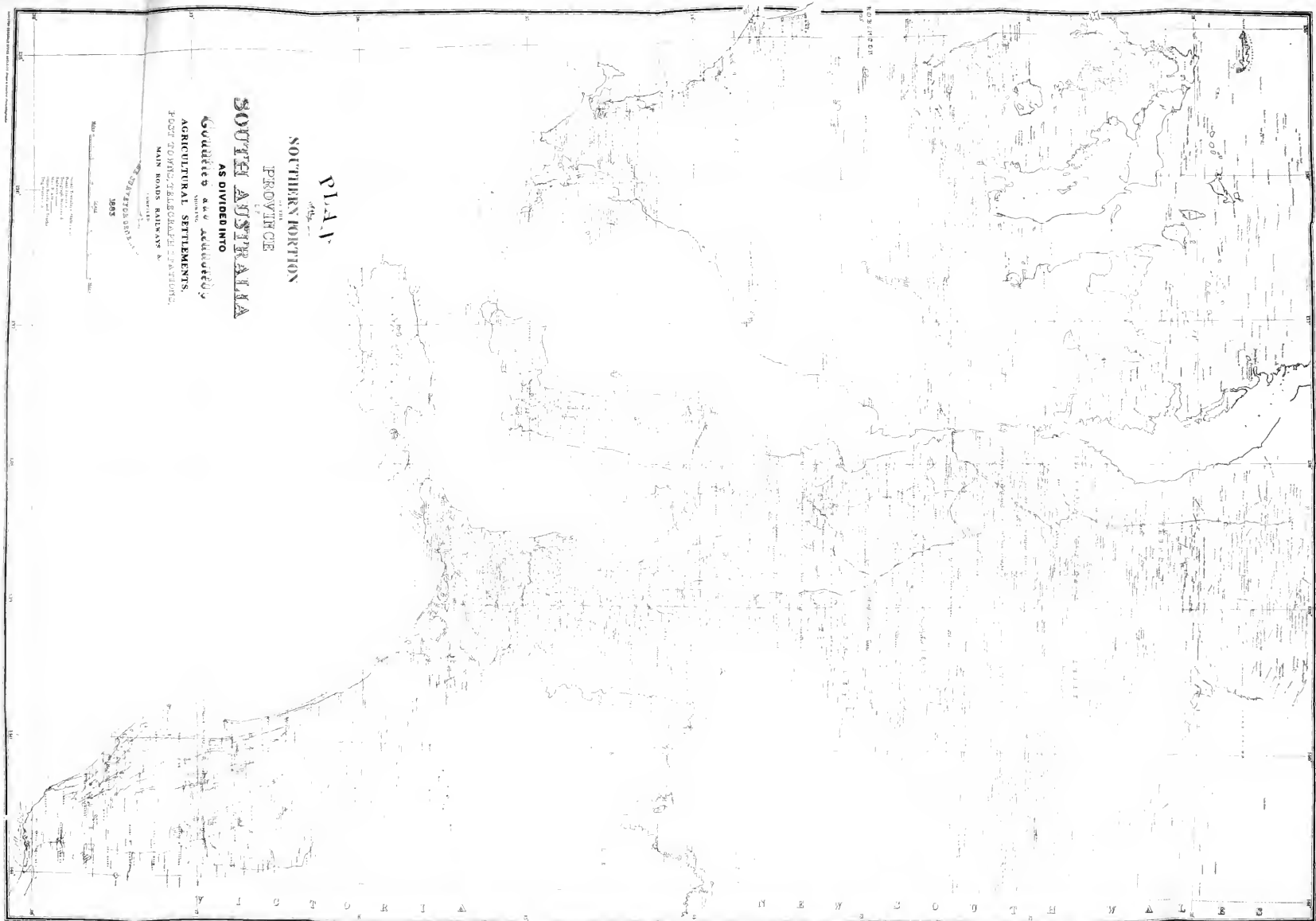


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PLAN OF THE CITY OF ADELAIDE







PLAT

SOUTHERN PORTION
PROVINCE

SOUTH AUSTRALIA
AS DIVIDED INTO

COUNTIES AND DISTRICTS
AGRICULTURAL SETTLEMENTS
POST TOWNS, TELEGRAPH STATIONS
MAIN ROADS, RAILWAYS &

1885

Scale
Miles
Kilometers

3 1158 00474 9726

AB

UC SOUTHERN REGIONAL LIBRARY FACILITY



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PLEASE
TRY

